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Divisional Defense Committees Organized

Office of Production Management Announces Formation of Three Divisional Committees For Pulp, Paper, Paper Board, Paper Products and Publishing—Over-All Advisory Body To Be Organized.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 20, 1941—Formation of three Divisional Committees which later will be subcommittees of an overall Pulp and Paper Defense Industry Advisory Committee was announced today by the Bureau of Clearance of Defense Industry Advisory Committee, Office of Production Management.

The three Divisional Committees named today are those for Pulp, Paper and Paperboard; Paper Products; and Printing and Publishing. In the near future an over-all Pulp and Paper Defense Industry Advisory Committee will be chosen from among the membership of the three Divisional Committees announced today.

Mr. N. A. McKenna, of the Division of Production, has been designated Government Presiding Officer.

Pulp, Paper and Paperboard Divisional Committee

The Divisional Committees announced today are as follows:

W. J. Alford, President, Continental Paper Company, Bogota, N. J.

D. K. Brown, President and General Manager, Neenah Paper Company, Neenah, Wis.

Hugh J. Chisholm, president, Oxford Paper Company, New York.

J. M. Conway, president and General Manager, Hoberg Paper Mills Company, Green Bay, Wis.

Douglas Crocker, vice president, Crocker, Burbank & Co., Assn., Fitchburg, Mass.

R. J. Cullen, president, International Paper Company, New York.

Sidney Frohman, president and general manager, Hinde & Dauch Paper Company, Sandusky, Ohio.

E. E. Grant, president, Crystal Tissue Company, Middletown, Ohio.

Ralph Hayward, president, Kalamazoo Vegetable Parchment Company, Kalamazoo, Mich.

Arthur L. Hobson, president, St. Croix Paper Company, Boston, Mass.

Amor Hollingsworth, president, Penobscot Chemical Fibre Company, Boston, Mass.

J. W. Kieckhefer, president and general manager, Kieckhefer Container Company, Camden, N. J.

Cola G. Parker, vice-president, Kimberly-Clark Corporation, Neenah, Wis.

John L. Riegel, president and general manager, Riegel Paper Corporation, New York.

J. D. Zellerbach, president, Crown Zellerbach Corp., San Francisco, Cal.

Paper Products Divisional Committee

F. C. Ash, treasurer, Sealright Company, Inc., Fulton, N. Y.

Walter J. Bergman, vice-president, Lily-Tulip Cup Corporation, New York.

James L. Coker, president, Sonoco Products Company, Hartsville, S. C.

H. S. Dennison, chairman of board, Dennison Manufacturing Company, Framingham, Mass.

Willard J. Dixon, vice-president and secretary, St. Regis Paper Company, New York.

Willard Henry, president, Southern Advance Bag and Paper Company, Chicago, Ill.

Irving Hill, president and general manager, Lawrence Paper Company, Lawrence, Kan.

E. V. Johnson, 1st vice-president, U. S. Envelope Company, Springfield, Mass.

George Mellen, general manager, Wall Paper Division, Imperial Paper and Color Corporation, Glen Falls, N. Y.

Vasco Nunez, vice-president, Nashua Gummed and Coated Paper Company, Nashua, N. H.

D. H. Patterson, Jr., president, Fibreboard Products, Inc., San Francisco, Cal.

J. H. Paterson, general manager, F. N. Burt Co., Inc., Buffalo, N. Y.

C. A. Reed, president and chairman of board, C. A. Reed Company, Williamsport, Pa.

J. Thurston Roche, president, Southern Central Company, Memphis, Tenn.

R. E. Rutledge, vice-president, Sutherland Paper Company, Kalamazoo, Mich.

(Continued on page 46)

Marathon Mills Buys Whitmore Machine Co.

Property of Specialty Machine Plant Adjoining Menasha Products Division Purchased By Marathon Paper Mills Who Will Continue Machine Business — Consolidated Dam Will be Completed Soon.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., August 18, 1941—Purchase was made last week by the Marathon Paper Mills Company of the buildings of the Whitmore Machine and Foundry Company, Manasha, Wis., according to R. J. Sund, vice-president and production manager of Marathon's Menasha Products division.

The property was acquired for possible expansion in the future, Mr. Sund said. Part of the plant was rented by the Menasha Printing Ink Company, a subsidiary of Marathon. The ink company will continue operations in the buildings. The Marathon company also will continue to operate the machine company, which builds specialty machines and does general repair work. Guy Waldo, who has been the manager, will continue in that capacity, and the thirty employees will be retained.

New Consolidated Dam Nears Completion

Construction of the new dam of the Consolidated Water Power and Paper Company on the Wisconsin River at Wisconsin Rapids, Wis., will be completed about October 1st. The work began June 23, and the company has 110 men employed on the project at the present time.

The dam is adjacent to the main Consolidated mill, and replaces an old timber and rock spillway built 38 years ago when the company began operations. A specially designed machine is being used to pour concrete into the forms through a seven inch pipe 1,200 feet long, with 700 feet extending across the forebay on pontoons. The over-all length of the new dam will be 1,025 feet and it will be 38 feet high. The retaining wall will be 25 feet thick at its base, and 30,000 tons of concrete will be required. There will be ten motor-operated flood gates, each 16 by 30 feet.

SEC Approves New Power Issue

Approval has been given by the Federal Securities and Exchange Commission to the application of the Wisconsin Power and Light Company, Madison, Wis., to issue $30,000,000 of 3¼ per cent first mortgage bonds, series A, due 1971, and $3,000,000 of 2¼, 2¾ and 3 per cent unsecured notes. The application previously had been approved by the Wisconsin Public Service Commission. Proceeds are to be used toward redemption of $33,000,000 of 4 per cent first mortgage bonds. The new issue will be sold at competitive bidding.

Paper Mill Employees on Outings

The sixth annual picnic of employees of the Marathon Paper Mills Company's mill at Rothschild, Wis., was held Sunday, August 10, at Rothschild Park. It was sponsored by the AFL unions of the mill with Clarence Hussong as general chairman and Nicholas Eckes and Glenn Bennett as co-chairmen. Various contests were held at which prizes were awarded.

There was an attendance of 650 at the annual employees' picnic of the Appleton Coated Paper Company, Appleton, Wis., at Strobe's Island Saturday, August 9. A ball game called after five innings on account of rain was won 4 to 0 by the day workers from the shift workers. Games and contests were enjoyed.

Kimberly-Clark Corporation engineers from all of the company's mills held a picnic Wednesday afternoon, August 13, at Lakeview Park, Neenah, Wis. The engineering department of the Lakeview mill sponsored the outing, and there was an attendance of approximately 175. A soft-ball game between the Main Office Tigers and the Kimberly mill team was won by the former, 10 to 8. The mill band played a concert in the evening.

"Consolidated Day" at the baseball park at Wisconsin Rapids, Sunday, August 10, drew a crowd of 2,500. The park was taken over for the day by the Consolidated Water Power and Paper Company and the mill unions for a Wisconsin State League game between the Wisconsin Rapids and Oshkosh, Wis., teams. It ended in a victory for Wisconsin Rapids 9 to 6. Special souvenir programs were printed for the event. The City band gave an hour's concert previous to the game.

Schmerein-Gilbert Nuptials

John D. Schmerein, Jr., and Miss Margaret Jane Gilbert, both of Neenah, Wis., were married Thursday afternoon, August 14, at Tamagami, the home of the bride's grandfather, F. J. Sensengrenner, president of Kimberly-Clark Corporation, located on the north shore of Lake Winnebago. The ceremony was performed by Bishop Paul Peter Rhode of Green Bay, Wis., assisted by the Rev. Joseph Glueckstein, pastor of St. Margaret Mary church, Neenah, and the Rev. Delbert Basche, chancellor of Green Bay Diocese. A reception was held afterwards for 400 guests.

Miss Gilbert is the daughter of Mr. and Mrs. George M. Gilbert, and her father is vice-president of the Gilbert Paper Company. Mr. Schmerein is associated with the Menasha Products division of the Marathon Paper Mills Company. The couple left on an unannounced wedding trip and will be at home after October 1 at 518 Riverway, Menasha, Wis.

Paper Stocks Dealers To Erect Warehouse

Construction of a $10,000 one-story warehouse will be started at once by Meyer Burstein and Sons, paper stock dealers, Neenah, Wis. It will be of concrete construction. The contract has been awarded to the Ben B. Ganther Company, Oshkosh, Wis.

Gaylord Acquires Railroad Line

The Gaylord Container Corporation, Pulp and Paper Division, Bogalusa, La., has concluded arrangements for purchase of a section of the line of the Baton Rouge, Hammond & Eastern Railway extending between Hammond and Covington, La., and will operate in the future in connection with its paper and board mill at Bogalusa, for freight service for plant.

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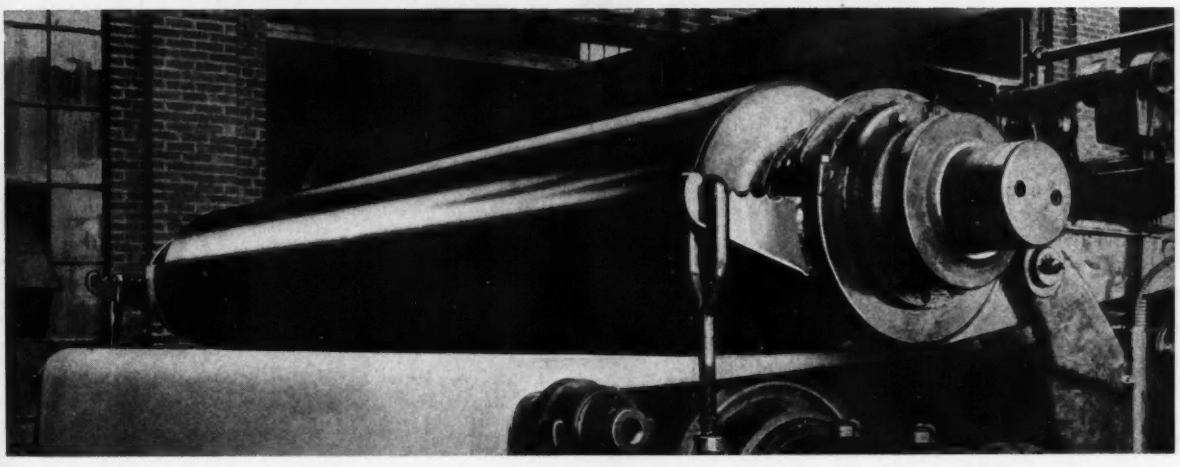

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THE RUBBER ROLL SPECIALISTS

Newton Upper Falls, Mass.

Canada Discusses Higher Newsprint Prices

Reports Reflect Possibility That Canadian Manufacturers May Decide To Advance Prices $5 A Ton In Last Quarter—Newsprint and U. S. Dollars — Limit Use of Wrapping — Other Late News.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., August 18, 1941—Talk about a prospective rise in the price of newsprint, which has been going on for weeks, has now become more definite. Some time ago the suggestion was that any upward price revision would be deferred until January 1, but now there are reports that a $5 a ton increase is under consideration for the final quarter of the present year. What has brought about the consideration of a price change for the final months of the year has been a jump in the official cost-of-living index to more than 10% above the pre-war level, necessitating another wage increase by companies which have undertaken to pay living cost bonuses with every 5% increase in the living cost index.

Increased Costs a Major Factor

Discussing the problem, the Financial Times, of Montreal, says that increased costs have just about wiped out the benefit to Canadian companies of payment in United States funds and yet another factor has been the question of newsprint consumption.

Last year, it says, Canadian production rose to second highest level on record, largely due to heavier U. S. purchases. To an industry such as newsprint, with heavy capital investment (and bond interest charges), and turning over its capital only a few times a year, compared with once or twice a week as in case of some businesses, volume of sales is as important to profits as price. This year, with European newsprint shut off, the important U. S. market is likely to take even more newsprint than last year, but overseas sales by the Canadian companies have dropped sharply, and total production this year probably will be below 1940.

Newsprint and U. S. Dollars

Government officials at Ottawa are reported as declaring that newsprint continues to be Canada's most valuable single source of foreign exchange. Newsprint exports, mainly to the United States were valued at $151,000,000 in 1940, compared with $116,000,000 in 1939, it is pointed out, and these exports mentioned their position ahead of wheat in export dollar. value. In 1941, continued heavy exports are being made with consequent assistance to the financial position of the Dominion.

Reports of paper shortages in the United States do not mean that the newsprint industry has failed to supply market requirements, as the shortage is confined largely to manufactured papers.

In spite of the large income to Canada from newsprint officials said outside customers are buying at low prices compared to those which existed during the first Great War and immediately afterwards. The gross pulp and paper output of Canada reached a peak of $232,000,000 in 1920 and gained another high in 1929 of $243,970,761.

Even before the present war, Canada reported more newsprint than all the other exporting countries put together. Finland, Sweden, Germany, Austria and The Netherlands have been removed from competition, and Canada has captured many of their former customers outside Europe.

Information at Ottawa is that peak Canadian capacity in newsprint production has yet to be reached and that further development is possible.

"Abundant water power adjacent to extensive forest resources of the pulpwood species and an increasing demand for newsprint paper led to the speedy development of the Canadian industry and the limit of this expansion has by no means been reached," an official said.

Limiting Used Wrapping Paper

The War Time Prices and Trade Board has taken action to ban multi-colored and double bread wrappers and has supplemented this by an order restricting the extent of the imprinting and the weight and quality of the wrapping paper.

Henceforth, the board orders, the highest quality paper permitted for bread wrappers is either unfilled white sulphite or a brown kraft of standard shade of shades. This paper is not to weigh more than 20 pounds, dry weight, 24 inches by 36 inches basis for the 480-sheet ream, and not more than 32 pounds on the same basis when waxed. The wrapper must not be treated in any way for opacity.

Printing on bread wrappers must be in a single color, in standard type design, and must not cover more than 25 per cent of the surface.

While these regulations are effective immediately, bakers are authorized to use stocks of wrappers on hand or those now in process of being printed. Stocks of filled white sulphite paper in possession of the bread wrapper manufacturers, or ready for delivery to these firms by paper manufacturers on orders placed prior to Aug. 8, may also be utilized.

Plates currently used for imprinting wrappers which do not involve printing in more than one color and the imprint of which does not exceed 25 per cent of the surface coverage are also permitted under the new order even though they may not be designed in standard type.

Tax Deduction for Forest Industries

The Minister of National Revenue has announced the formation of a Timbre Deflection Committee to study the question of additional allowances, as deductions from profits for income tax purposes, which might be properly granted forest industries with respect to enhanced production undertaken in furtherance of the war effort.

The committee, it is stated, already has circularized a questionnaire among all important elements of the lumber and pulp and paper industries and these are to be returned this month. The replies will be given consideration by the new committee in making recommendations to the Minister and if it is considered necessary hearings may be held at which representatives of industry may present their views.

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Paper Securities Receive More Attention

Expectation That Paper and Pulp Mills Will Report Profits Equal To Last Year Increases Interest In Stocks of Leading Companies— Premier Hepburn Visits Ontario Paper Co. — Other Trade News.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., August 18, 1941—The Federal Income Tax Department has not as yet given out any official information as to rulings on taxation payable by individual pulp and paper companies, but it is understood that operators made provision in their 1940 accounts sufficient to take care of assessments. Practically all operators reported minimum provision for income and excess profits taxes. Newsprint manufacturers, as a group, appealed to the taxing authorities for consideration as a "depression industry" and were successful in their representations, while fine paper makers, kraft manufacturers, etc., were to pay the full tax.

It appears now that pulp and paper companies will be asked to pay additional taxes on their 1941 business, the minimum income and excess profits tax being stepped up from 30% to 40%.

However, the companies are expected this year to show as big a revenue as they did last year and in some instances income may be a little higher.

Talk of Higher Pulp Security Prices

On net, the pulp and paper operators should be able to show as large a profit as in 1940.

In view of the ruling of the income tax department and the expected returns for this year, a renewed interest is being shown in the pulp and paper stocks. To date this has not been reflected in any appreciable trading. However, the group as a whole has been receiving more attention, which, if expected net earnings materialize, may result in an upward movement of prices.

Some of the more actively traded pulp and paper stocks appear, on the average, to be running at a moderate price. For example, with earnings of better than $2 a share, Price Bros. and Co. common sells for less than 12. St. Lawrence Paper Mills preferred, which last year earned $4.14 a share, sells at 36. Bathurst, with earnings in 1940 of nearly $2 a share on the "A" stock, sells between 12 and 13.

In a list of 12 pulp and paper stocks, only four are paying dividends. There is no indication that any of the others will begin payments in the near future. On the other hand, the financial position of all companies has undergone a marked improvement in the last three or four years. Considerable equities have been built up back of the junior securities. With the added returns for 1941, the financial position of most of the companies will be the best reported in the last decade, a fact which is being noted by investors.

The Ontario Paper Company townsite and timber cutting project at Heron Bay, Ont., on Lake Superior, was visited this week by Premier Mitchell F. Hepburn and other Ontario Government officials. The development is one of the Canadian enterprises of the Chicago Tribune, published by Col. Robert McCormick, which newspaper, with the New York Daily News, takes the complete output of the company and its subsidiary, Quebec North Shore Paper Co.

Host to the government party on the tour was Arthur A. Schmon, president and general manager of Ontario Paper Company and Quebec North Shore Paper Company and chief representative of the McCormick newsprint interests in Canada. Also in the party were Arthur G. Slaght, K.C., Toronto, member of parliament for Parry Sound, and one of the several Canadian counsel retained by Ontario Paper; and M. C. Martin, of Chicago, legal adviser to the McCormick-Tribune interests and for Ontario Paper Co. in the United States.

Reports from United States sources that Col. McCormick himself was one of the party were denied.

Since the beginning of the present war, and even before that, Canadian public opinion toward Col. McCormick and the Tribune has been a background factor shadowing Ontario Paper. In some quarters it has been thrust into discussion of the company's exemption from the prorationing of regular newsprint production. Tribune executives are believed to be more concerned about the political and operating status of their supply sources in Canada than they are over the rise of hostile criticism in the United States.

However, there is no evidence that any of these considerations figured in the inspection tour to Heron Bay, or that there was any discussion of possible adjustment of Ontario Paper's timber limits and cutting rights in the area.

The company opened up the limits several years ago and established the modern townsite and cutting facilities in response to a movement to start such a development. Ontario authorities sought to create employment and ensure a flow of Ontario pulpwood to the company's mill at Thorold.

Agree on Board Prices

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 20, 1941—West Coast manufacturers of paper board have agreed individually with the Office of Price Administration and Civilian Supply to continue until December 31, 1941, unless unusual circumstances intervene, the prices first agreed upon with OAPCS of June of this year, Leon Henderson, administrator, announced today.

Base prices which will prevail on deliveries of ten tons or more are as follows: Plain Chip, $50.00 per ton; Single Manila, $63.50 per ton; White Patent Coated, $80.00 per ton. The differentials for other grades in effect on April 1, 1941 are to be applied to these base prices.

In acknowledging the agreement Mr. Henderson wrote as follows to paper companies involved: "We wish to thank you for your willingness to adhere to these prices, and we request you to report to the Office of Price Administration and Civilian Supply any sale or offer for sale of the board mentioned above of which you have knowledge, at prices in excess of those covered by the agreement. The receipt of such information will enable this office to take appropriate action."

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MAGNOLIA PETROLEUM COMPANY • GENERAL PETROLEUM CORP. OF CALIFORNIA

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending August 20, 1941

	High	Low	Last
A. P. W.	....	....	....
Armstrong Cork Co.	29⅛	28¾	28¾
Celotex Corp.	9	8¾	9
Celotex Corp., pf.	....	....	....
Certain-Teed Products Corp.	3½	3¼	3¼
Certain-Teed Products Corp., pf.	32¼	30½	32
Champion Paper & Fibre Co.	21½	21¼	21¼
Champion Paper & Fibre Co., pf.	104	104	104
Congoleum-Nairn Co.	18	17⅜	18
Container Corp. of America	15½	15	15¼
Continental-Diamond Fibre Co.	8⅞	8½	8⅞
Crown-Zellerbach Co.	13¾	13½	13½
Crown-Zellerbach Co., pf.	88½	87½	88
Flintkote Co.	14⅜	14	14¼
Robert Gair	2⅛	2	2⅛
Robert Gair, pf.	10⅛	10⅛	10⅛
International Paper & Power Co.	18	17	18
International Paper & Power Co., pf.	68½	67½	68¼
Johns-Manville Corp.	66½	65⅛	66¼
Johns-Manville Corp., pf.	128	127	128
Kimberly-Clark Corp.	30¼	30¼	30¼
MacAndrews & Forbes	....	....	....
MacAndrews & Forbes, pf.	....	....	....
Masonite Corp.	23¼	22¾	23
Mead Corp.	8¾	8¼	8¼
Mead Corp., pf.	79½	79¼	79½
Paraffine Companies, Inc.	30⅝	30⅝	30⅝
Paraffine Companies, Inc., pf.	102¾	102	102¾
Rayonier, Inc.	16½	15⅜	15⅜
Rayonier, Inc., pf.	28	28	28
Ruberoid Co.	18	17⅛	18
Scott Paper Co.	37½	37	37
Scott Paper Co., pf.	110⅜	110⅜	110⅜
Sutherland Paper Co.	....	....	....
Union Bag & Paper Corp.	11¼	10½	10⅞
United Paperboard Co.	4⅛	3¾	4
U. S. Gypsum Co.	58½	56⅞	58
U. S. Gypsum Co., pf.	....	....	....
West Virginia Pulp & Paper Co.	19	19	19

New York Curb Exchange

High, Low and Last for Week Ending August 20, 1941

	High	Low	Last
American Box Board Co.	....	....	....
Brown Co., pf.	22	22	22
Great Northern Paper Co.	39½	39½	39½
Hummel-Ross Fibre Corp.	7	6¼	6¼
National Container Corp.	10½	10¼	10¼
St. Regis Paper Co.	2⅜	2⅛	2⅛
St. Regis Paper Co., pf.	111	108	111
Taggart Corp.	....	....	....

International Nets $3,214,688

Richard J. Cullen, president, in submitting to stockholders the statement of consolidated profit and loss of International Paper and Power Company and subsidiary companies for the second quarter ending June 30, 1941, says:

"Before taxes based on income, net profit for the second quarter of 1941 amounted to $9,214,200 as compared to $8,555,100 for the second quarter of 1940. In 1941, however, it was necessary to make substantially larger provision for taxes based on income and after such provision net profit for the second quarter amounted to $3,214,688 this year as compared to $3,938,860 in 1940.

"For the first six months of 1941 net profit amounted to $6,761,511, after provision of $9,075,053 for taxes based on income. This compares with a net profit of $6,899,433 during the first six months of 1940, after provision of $5,259,885 for taxes based on income.

"On June 28, 1941 dividends totalling $6.25 a share were paid on the cumulative convertible 5 per cent preferred stock, which included a payment of $5 a share on account of arrears in addition to the regular dividend of $1.25 a share for the second quarter of 1941.

"This left an accumulation of $5 a share still to be paid on account of arrears."

Consolidated profit and loss statement follows:—

STATEMENT OF CONSOLIDATED PROFIT AND LOSS

	Three Months Ended June 30, 1941	Three Months Ended June 30, 1940
Sales and Other Income:		
Gross sales, less returns, allowances and discounts	$50,426,670.33	$43,902,539.22
Other income—net	667,077.22	624,542.61
	$51,093,747.55	$44,527,081.83
Cost and Expenses:		
Cost of sales:		
Pulpwood, labor, materials, etc.	$26,253,583.74	$23,497,548.78
Maintenance and repairs	2,582,944.04	2,086,144.28
Taxes (other than income taxes)	873,250.47	779,302.12
Outward freight and delivery expenses	6,382,305.96	5,533,640.49
Selling, general and administrative expenses	1,842,212.26	1,605,150.97
Provision for doubtful accounts	167,369.11	150,217.29
	38,101,65.58	33,652,003.93
	$12,992,081.97	$10,875,077.90
Deductions:		
Interest on funded debt	$ 772,363.36	$ 770,085.51
Interest on other debt	1,109.99	505.95
Amortization of debt discount and expense	95,346.22	87,937.01
Depreciation and obsolescence	2,716,745.73	1,200,763.52
Depletion	227,942.93	246,197.62
Dividends paid on stock of subsidiary	8,495.00	—
Dividends accrued but not being currently paid on preferred stocks of subsidiaries	5,878.25	14,487.75
	3,777,881.48	2,319,977.36
Net Profit before taxes based on income	$ 9,214,200.49	$ 8,555,100.54
Less taxes based on income:		
U. S. Federal taxes under existing laws:		
Normal	$ 1,940,059.20	$ 1,613,138.25
Excess profits	1,857,788.00	—
Provision for additional taxes under proposed laws	1,500,000.00	2,000,000.00
State taxes	256,286.00	155,543.00
Canadian and other foreign taxes	445,378.91	847,559.38
	5,999,512.11	4,616,240.63
Net Profit	$ 3,214,688.38	$ 3,938,859.91

At June 30, 1941, the undeclared cumulative dividends on the outstanding Cumulative Convertible 5% Preferred Stock amounted to $5.00 per share or a total of $4,629,675.00.

The above statements are subject to audit and final adjustment at December 31st (end of fiscal year).

U. S. Envelope Earnings Up

The United States Envelope Company reports for the six months ended June 30, 1941 subject to final audit net earnings of $372,788 after depreciation but before provision for federal income taxes as compared with $311,051 for the six months ended June 30, 1940.

After deducting estimated federal income taxes of $124,000 and after addition to reserve for adjustment on raw materials of $50,000 there remained net of $198,788, equal, after preferred dividends to $2.24 a share on the common.

Masonite Files with SEC

The Masonite Corporation has announced that it had filed with the Securities and Exchange Commission in Washington a registration statement covering a proposed new issue of 35,000 shares of 4½% cumulative preferred stock of par value of $100.

The proceeds will be used, the statement said, to redeem 18,419 shares of 5% cumulative preferred stock now outstanding and to reimburse the cor-

poration's treasury for expenditures in connection with an improvement program now under way at its Laurel, Miss., plant. The remainder of the proceeds would be added to the company's working capital.

Principal underwriters of the proposed issue are Blyth & Co., Inc., and Merrill, Lynch, Pierce, Fenner & Beane, of New York City; Central Republic Company, Chicago; Wisconsin Co. and Milwaukee Co., Milwaukee; Wells-Dickey Co., Minneapolis, and Dean Witter & Co., San Francisco.

Directors of the Masonite Corporation have declared an extra dividend of 25 cents a share on the common stock, payable September 10 to stockholders of record on August 25. A similar amount was paid on June 10.

Gaylord Nets $606,039

The Gaylord Container Corporation and subsidiary, for the six months to June 30, reports a net profit, $606,039, to 86 cents each on 539,221 shares of common stock outstanding, against $643,669, or 92 cents a common share, last year. June quarter: Net profit, $394,201, or 60 cents a common share, against $442,546, or 69 cents a common share, for June quarter a year ago.

A. Bankus Named to Zellerbach Board

Stockholders of Crown Zellerbach Corporation have elected A. Bankus to the board of directors, replacing the vacancy caused by the recent death of Isadore Zellerbach. Mr. Bankus is a vice president of the company and completed 35 years of service a short time ago. He is also vice president of Pacific Mills, Ltd.

Crown Zellerbach Pays Loan

The Crown Zellerbach Corp. had paid off another $1,000,000 of long-term bank loans. That reduced the outstanding loans to $7,000,000. For the last eighteen months the company has been paying off these loans at the rate of $1,000,000 about every three months.

Great Northern Nets $1.29

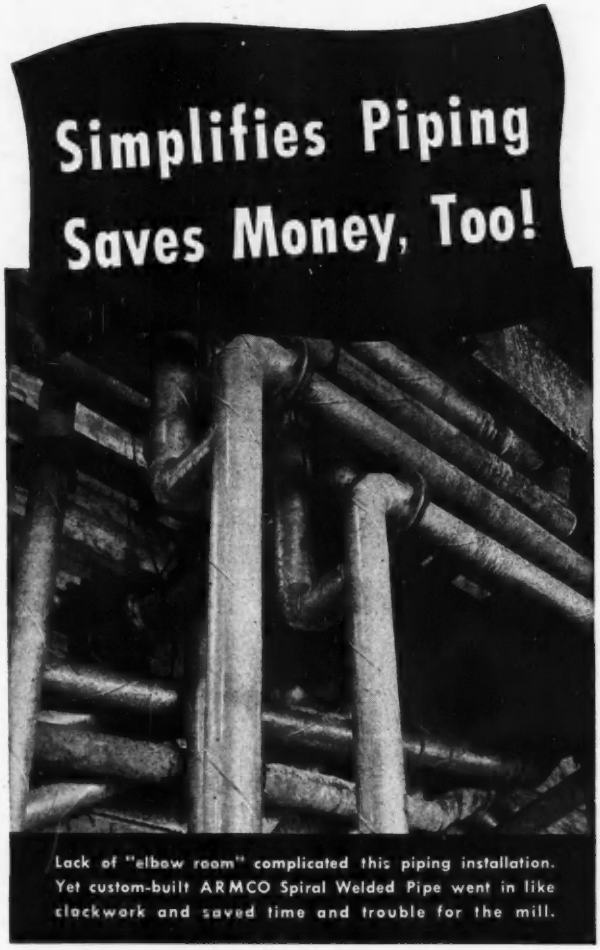
The Great Northern Paper Company and wholly owned subsidiaries for the six months to June 30, reports a profit of $1,288,485, equal to $1.29 a share on 997,480 capital shares, against $1,426,155, or $1.43 a share, last year.

Soundview Pulp Earns $143,167

The Soundview Pulp Company reports $143,167 net profit for July, somewhat under the preceding month and also lower than in July, 1940. For the first seven months of this year net profit was $1,119,640, compared with $1,345,053 last year.

Announces Newsprint Price

The Great Northern Paper Company announced on August 13 increase in the price of newsprint of $1 per ton for the last quarter of 1941. This brings the company's price to $50 per ton for the New York area.



Lack of "elbow room" complicated this piping installation. Yet custom-built ARMCO Spiral Welded Pipe went in like clockwork and saved time and trouble for the mill.

When piping problems pile up—whether it's high costs, excessive maintenance or complicated assemblies—take this friendly tip. Sturdy ARMCO Spiral Welded Pipe will simplify the job and save as much as 30 per cent on the cost of a single installation.

ARMCO's method of prefabricating pipe means that fittings are made-to-order and come welded to straight pipe runs. This eliminates a pair of flanges at every bend, reduces weight and saves hours of assembly. Even the most complicated assemblies slip together like magic.

Efficient operation is also assured. ARMCO Pipe has high flow capacity and is easy to keep clean. The fewer flanges mean fewer joints and less chance for leaks.

It costs nothing to learn how ARMCO Spiral Welded Pipe can help on your toughest job. Diameters range from 6 to 36 inches, wall thicknesses from 7/64 to 1/2-inch. Just send us your plans and we'll give you an estimate and sketch of our proposed design. The American Rolling Mill Co., Pipe Sales Div., 2271 Curtis St., Middletown, Ohio.

ARMCO

ARMCO

SPIRAL WELDED PIPE

Buy Paper Under Walsh-Healey Act

WASHINGTON, D. C., August 20, 1941—For the week ending August 20, the government purchased $835,985.93 worth of paper and allied products under the Walsh-Healey act, with the following orders:

$53,326 worth of file folders for War, QMC, New Jersey, from Majestic File Folder Corporation; $26,245.18 worth of file folders for War, QMC, New Jersey from Goldsmith Brothers; $17,365.85 worth of manifold paper for War, QMC, Jersey City from Import Paper Company; $24,419.70 worth of book paper for GPO from Marquette Paper Company; $15,751.83 worth of book paper for GPO from Paper Corporation of U. S.; $35,000 worth of ledger paper for GPO from Marquette Paper Company; $16,000 worth of ledger paper for GPO from Barton, Duer and Koch Paper Company; $11,742 worth of book paper for GPO from Paper Corporation of U. S.; $24,584 worth of writing paper for GPO from Paper Corporation of U. S.; $10,200 worth of manifold paper for GPO from Paper Corporation of U. S.; $251,205.92 worth of fiber containers for War, Ord. N. J. from Seeley Tube and Box Company; $34,570 worth of mimeograph paper for War, QMC, N. J. from E. E. Lloyd Paper Company; $15,599.30 worth of wrapping paper for War, QMC, N. J. from Zellerbach Paper Company; $10,222.80 worth of note books for War, QMC, Jersey City from L. Hyman & Sons; $165,817.85 worth of mimeograph paper for War, QMC, Jersey City from Newhouse Paper Company; $13,545 worth of wrapping paper for War, QMC, Jersey City from Fulton Paper Company; $11,491 worth of manifold paper for War, QMC, Jersey City from Barton, Duer & Koch Paper Company; $11,527.45 worth of paper pads for War, QMC, Ga. from Graham Paper Company; $11,400 worth of teletype paper for Treas. Proc. DC from Ribbon and Ticker Paper Company; $22,720 worth of writing paper for GPO from Stanford Paper Company; $12,560 worth of bond paper for GPO from Mudge Paper Company; $22,784 worth of writing paper for GPO from Marquette Paper Company; $17,907.55 worth of antique paper for GPO from Paper Corporation of U. S.; $30,000 worth of punch cards for War, Proc. DC. from International Business Machines Corporation; $11,466 worth of photo print albums from Elbe File & Binder Company, Inc.

To Install Machine at Longview

LONGVIEW, Wash., August 16, 1941—Installation of another specialty paper machine will begin at the Pacific Straw Paper and Board Company plant here in a few weeks. The machine, rebuilt after purchase in Connecticut, will have a capacity of 25 tons of specialty board daily and will increase the plant's production by 50 per cent.

The company is to build an addition 50 by 200 feet in size, to provide space for the new machine.

Harry B. Jones Dead

Harry B. Jones, formerly superintendent of the mill of the United Paperboard Company, Thomson, N. Y.; the Downingtown Paper Company, Downingtown, Pa.; Pynetree Paper Company, Gordon, Ga. and others, died Tuesday afternoon, August 19, at Binghamton, N. Y. The funeral will be held at 2 o'clock Friday afternoon at the Rice Funeral Home, Johnson City, N. Y.

T. B. McCabe Made Deputy Director

WASHINGTON, D. C., August 18, 1941—Thomas B. McCabe of Swarthmore, Pa., president of the Scott Paper Company, today was named deputy director of the Division of Priorities, Office of Production Management, by Edward R. Stettinius, Jr., priorities director.

Mr. McCabe, who succeeds James L. O'Neill, vice president of the Guaranty Trust Company of New York, will have charge of all operating and procedural problems of the division.

THOMAS B. MCCABE

Mr. McCabe obtained a leave of absence from the Scott Paper Company, but will continue as chairman of the board of the Federal Reserve Bank of Philadelphia. He served last year in the Industrial Materials Division of the National Defense Advisory Commission. He has resigned as a director of American Viscose Company and the Air Reduction Corporation and as chairman of the committee on economic policy of the National Association of Manufacturers.

Government Paper Bids

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 20, 1941—Government Printing Office has received the following bids for 460,000 pounds of 38 x 48 offset book paper; Mudge Paper Company, at 8.37 cents; and R. P. Andrews Paper Company, 7.8 cents (for 50,000 pounds only).

For 80,000 pounds of 28 x 34 white sulphite writing paper: Mudge Paper Company, 9.17 cents; and Old Dominion Paper Company, 10.599 cents.

For 133,320 pounds of 24 x 38 high finish sulphite manila tag board: Paper Corp. of U. S., 6.25 cents; R. P. Andrews Paper Company, 7.25 cents; Perkins Goodwin Company, 6.25 cents; Mudge Paper Company, 6.25 cents; and Barton, Duer & Koch Paper Company, 6.25 cents.

For 30,000 sheets of 22 x 28 blue railroad board: Old Dominion Paper Company, $32.398 per M sheets; R. P. Andrews Paper Company, $32.33; Stanford Paper Company, $33.76; and Virginia Paper Company, $36.00.

Orders Are Delayed

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., August 18, 1941—In common with other localities, many paper merchants here are having great difficulty in securing supplies promptly, due to orders to the mills for material in connection with the defense program, which must take priority.

It is reported here that the Missisquoi Corporation, of Sheldon Springs, Vt., has Government orders for material for tags used on ammunition boxes and for tickets for canteens. It is understood also that among other concerns having Government orders are Hollingsworth & Vose Company, of East Walpole, Mass., and the Dennison Manufacturing Company, Framingham, Mass.

Some concerns have been indirectly affected by the defense program. Employment has increased, with a consequent increase in income, and one evidence is in the greater consumption of ice cream. Among the mills which have had more business from this reason is the Fonda Container Company, Utica, N. Y., which makes cylindrical paper cans.

Start Plant at Salem

SALEM, N. Y., August 16, 1941—Announcement is made here that the Gotham Paper Company, operators of a paper mill at Battenville, plans to establish a converting plant in this village following an agreement by which a building will be furnished free of rent. The factory is a large concrete and glass structure which was vacant for several years until recently taken over by the United Paperboard Company, of Thomson. It was purchased by the village authorities in order to prevent its sale to a wrecking company. The agreement between the company and the village stipulates that certain repairs will be made by the latter to the building, including the installation of a heating system and turn the structure over to the concern without rent for a term of years. The mill will be used for finishing operations to tissue products made at the Battenville plant and will employ a working force recruited from this section.

PEELING PULP WOOD

Pulp Making begins back in the woods where logs are peeled. Felt making begins back on the range where sheep are raised.

The making of good felts depends on the selection and blending of the right kinds of wool — that's one reason for the dependable performance of ***Draper Felts.*** Let our representative tell you the others.

Draper Felts Favor Efficiency

DRAPER BROTHERS COMPANY

Woolen Manufacturers Since 1856 CANTON, MASS.

OUR REPRESENTATIVES *to serve you*

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C. K. BEECHER, Delaware, Ohio
W. L. CAMPBELL, Savannah, Ga.
O. J. LELOFF, Vancouver, Wash.
RALPH E. BRIGGS, Canton, Mass.

CONSTRUCTION NEWS

West Springfield, Mass.—The General Fibre Box Company, Inc., manufacturer of corrugated boxes and containers, has approved plans for new addition to local plant on Circuit avenue, to be one-story, reported to cost over $50,000, with equipment. It will be used for expansion in production division. General erection contract has been awarded to the Ley Construction Company, 1215 Main street, Springfield, Mass., and work will be placed under way at once. H. L. Sprague, 1570 Main street, Springfield, is architect.

Charlotte, N. C.—The McNeill Paper Company, 307 East 8th street, general paper products, wrapping papers, etc., has plans maturing for new one-story building on local site on North Tryon street, for storage and distribution, with offices and other operating facilities. Cost estimated close to $55,000, with equipment. Proposed to begin work soon. On completion, company will remove from present location to new building.

Port Edwards, Wis.—The Nekoosa-Edwards Paper Company, Inc., manufacturer of bond and other fine papers, wrapping stocks, etc., has completed plans for new addition to mill, consisting of a one-story structure, about 50 x 200 feet, to be used for storage and distribution service. No estimate of cost has been announced. General erection contract has been let to Frank Henry, 1120 South Sixth street, Wisconsin Rapids, and superstructure will be placed in progress soon. Company also has approved plans for remodeling an existing one-story building for a recreation center for mill employes, to include library, billiard room, bowling alleys, etc. Award for work has been made to same contractor. Donn Hougen, 132 East Grand avenue, Wisconsin Rapids, is architect.

North Bergen, N. J.—The Grand City Container Corporation, 622 East 57th street, New York, N. Y., manufacturer of corrugated boxes and containers, has awarded general contract to Brown & Matthews, Inc., 122 East 42nd street, New York, for construction of new plant on Highway No. 1, North Bergen, where tract of approximately 12 acres of land was acquired last spring, as previously noted in these columns. It will consist of a main one and two-story structure, 300 x 800 feet, to be equipped for large capacity. A portion of building will be used for offices and general operating service. Cost estimated about $750,000, including equipment. Erection is scheduled to begin at once. On completion, company will remove existing plants at New York address noted, including its subsidiary interests, Federal Carton Corporation, and G. & B. Bakers Supply Corporation, as well as branch factory at 128 32nd street, Brooklyn, to new location, where production for metropolitan district will be concentrated in future. Ely Jacques Kahn and Robert Allen Jacobs, 2 Park avenue, New York, are architects.

Cloquet, Minn.—The Wood Conversion Company, manufacturer of insulating board, building board and kindred products, has superstructure nearing completion on new addition to mill, previously referred to in these columns, and expects to have building ready for occupancy at early date. It will be one-story, about 58 x 315 feet, and will be used for expansion in dryer department; an adjoining structure, now used for similar service, is being remodeled and improved. Entire project will cost close to $100,000, including equipment. Thomas J. Shefchik, Lonsdale Building, Duluth, Minn., is architect.

Arden, Nev.—The Blue Diamond Corporation, 1650 South Alameda street, Los Angeles, Cal., manufacturer of wall board, lime and other materials, has completed plans for construction of a new mill for the production of wall board at Arden, in vicinity of company's raw material properties at Blue Diamond, Nev. It will comprise several large one-story production buildings, with storage and distributing structures, power house, machine shop and auxiliary buildings, and is reported to cost close to $500,000, including equipment. Machinery and equipment will be installed for heavy output. A contract for structural steel framing has been let to the Consolidated Steel Corporation, Eastern and Slauson avenue, and work is scheduled to be placed under way at early date.

Urbana, Ohio—The Howard Paper Company, manufacturer of bond and other writing paper stocks, has asked bids on general contract for new one-story building at mill, to be used for office and general operating service. No estimate of cost has been announced. Erection contract is scheduled to be awarded soon. Mueller & Hair, Hamilton, Ohio, are architects; Willard C. Pistler, 4 West Seventh street, Cincinnati, Ohio, is consulting engineer.

Alhambra, Calif.—The Standard Felt Company, 29 South Palm avenue, manufacturer of roofing felts, etc., has begun erection of new one-story addition to plant. It will be used for expansion in output. No estimate of cost announced.

New Companies

Brooklyn, N. Y.—The Container Specialty Corporation has been incorporated with capital of $20,000, to manufacture and deal in paper cartons, containers, etc. New company is represented by David Kay, 261 Broadway, New York, N. Y., attorney.

Long Island City, New York, N. Y.—Philip F. O'Rourke, Inc., has been organized with capital of 100 shares of stock, no par value, to manufacture and deal in writing papers, envelopes, blotting paper stocks, etc. New company is represented by William L. Gross, 1 Cedar street, New York, N. Y., attorney.

Norwalk, Conn.—The Norwalk Paper Box Company, Inc., has been chartered with capital of $50,000, to manufacture paper boxes and containers of various kinds. It is proposed to operate a local plant. The incorporators include John Lessin, South Norwalk, Conn.; Abraham Kaplan and James Searing, Jr., both of Port Chester, N. Y.

New York, N. Y.—The H. & H. Paper Box Company, Inc., has been organized with capital of 100 shares of stock, no par value, to manufacture and deal in paper boxes and containers of various kinds. New company is represented by Fisher, Brandt & Berger, 1440 Broadway, New York, attorneys.

THE COUNTRY'S FOUNDERS, in uniting the separate colonies into one great nation under the Constitution of the United States, formed a notable merger of resources and facilities for the greater benefit of the people . . . their industries and commerce.

It is to this historic pattern, expanding the advantages of those we are privileged to serve . . . that the Niagara Alkali Company and the Electro

"ORDAINED AND ESTABLISHED" FOR THOSE WE SERVE

"SIGNING OF THE CONSTITUTION," BY J. W. STERNE, REPRODUCED THROUGH COURTESY OF ROBERT FOLGER'S ART COLLECTION

Bleaching Gas Company, affiliated since 1915, now unite as one enterprise in the fields of chemical research and manufacture under the name of Niagara Alkali Company.

As the Niagara Alkali Company, we will endeavor to solidify our new greatness by continuing to maintain the ideals and high principles of product integrity that always identified our services, while expanding the scope of these efforts for greater usefulness to both our old customers and new friends.

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EBG NIAGARA ALKALI COMPANY

Obituary

R. A. McInnis

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., August 18, 1941—The death took place on Friday last of R. A. McInnis, general manager of the Anglo-Canadian Pulp and Paper Company, and past president of the Canadian Pulp and Paper Association. For the past 13 years he had been at the head of the extensive Rothmere interests in Canada and Newfoundland, but had not been active for some months owing to ill health. He was born at Gravenhurst, Ont., on February 23, 1884, and was in his 58th year.

His death closes a connection of over forty years with the pulp and paper industry most of which was spent in Canada. Prior to joining the management of Belgo-Canadian Pulp and Paper in 1900 he had some experience in the United States in the paper trade. In 1914 he became assistant to the president of the Abitibi Power and Paper Company and from 1917 to 1926 occupied the position of manager.

He went to the Anglo-Canadian Company in 1927 as general manager and director and remained with that organization until ill health forced his retirement.

His first office in the Canadian Pulp and Paper Association was as chairman of the technical section which he held for the period 1929-30 following which he joined the executive committee of the organization and continued in office until 1936 when he was elected president remaining as such until 1938.

He served as president of the Northern Ontario Associated Boards of Trade and was an officer of Quebec Forest Industries Association for a number of years.

He was also identified with the Anglo-Newfoundland Development Company, and the steamship company of the same name. Other directorates held were Terra Nova Properties, Limited, and Quebec Logging Corporation.

He was married in 1907 to Ella Augusta, daughter of David L. Van Houten and had one son and two daughters.

Francis A. O'Neill

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., August 18, 1941—Francis A. O'Neill, whose death was recently mentioned in the PAPER TRADE JOURNAL, was born on October 1, 1880, in the small Pennsylvania town of Beth Ayres, about fifteen miles northeast of Philadelphia. He first entered the paper jobbing business in 1905 with the old firm of A. G. Elliott Co., Philadelphia. Two years later he founded the present firm, Paper Manufacturers Company, which began as a paper jobbing house. Several years later the paper converting division was added, comprising the manufacture of adding machine and cash register rolls as well as other small paper roll products.

In 1907, Mr. O'Neill became president of the firm and continued in that capacity until his death. As the business expanded new space was added until in 1924 the firm decided to purchase the ground at 5th and Willow streets, and thereon erected a modern, five-story building.

It was the driving ambition and outstanding personality of Mr. O'Neill that were responsible for the continual and rapid growth of this company's business. His passing means a loss of a fine-minded gentleman and constant friend, which is regarded by his friends as the ultimate usefulness. So while regretting that death parts us those who mourn, his family and colleagues, can look with satisfaction on the usefulness of his life over a long period of years which were marked with never ceasing serenity and never-ending blandness of humor so highly prized by those who knew him well enough to call him friend. One found in him kindliness, encouragement and that rare virtue tolerance. And because up to the end he kept his mind alert and attuned to the passing scene, Francis O'Neill became the symbol of temperate judgment and mellowed understanding.

On June 7 he suffered a heart attack, and for a

FRANCIS A. O'NEILL

period of four weeks apparently regained his health and appeared well on the road to recovery; however during the fifth week he contracted pneumonia, from which he never recovered. On July 12 he died, leaving his widow, Mary J. O'Neill, two daughters, Lucy T. Cook and Margaret M. Euler; two sons, Francis A. O'Neill, Jr., and Louis A. O'Neill; one brother, John A. O'Neill; one sister, Mary E. Farren, and six grandchildren.

Mr. O'Neill surrounded himself with an educated and efficient sales force as well as a capable office and managerial force. The Paper Manufacturers Company will continue to operate, following out the plans and in conformity with the ideals conceived through the years by its recently deceased president. There will be no change whatsoever in the personnel and managing force of the company.

Isadore Zellerbach

A portrait is presented herewith of Isadore Zellerbach whose death was briefly mentioned in the August 13 issue of the PAPER TRADE JOURNAL.

Mr. Zellerbach was a California Pioneer. Born at Moore Flats, in the Mother Lode country, February 6, 1866, he had little formal education, except that offered by the local grade school, and early in the 1870's he followed his father, Anthony Zellerbach, to San Francisco, where the elder Zellerbach had established himself on a small scale as a paper merchant.

Isadore Zellerbach did not immediately join his father, but spent several years, working and saving, and preparing himself to take an active part in the business.

When Isadore Zellerbach joined his father and brothers in the year 1888, business generally was not at its best, and the entire nation was nearing the panic of 1893, but from the very beginning of his association with the firm, Isadore was bent on increasing the stock of goods handled, and it is interesting to note that Isadore usually had his way.

By April 17, 1906, A. Zellerbach & Sons literally sprawled over San Francisco's printing district, with their 18 offices, salesrooms, warehouses and lofts. By strange coincidence, it was on that day that they bought the Union Pulp and Paper Company, with an office in Oakland, and it was from that Oakland office

ISADORE ZELLERBACH

that A. Zellerbach & Sons were doing business the day after the San Francisco Fire, which on April 18, 1906, destroyed sixteen of their warehouses.

Events moved swiftly after the fire. Improvements in methods of printing were making heavy demands on the paper industry, and A. Zellerbach and Sons, through the farsightedness of Isadore, were working constantly to keep abreast of the times. In May, 1907, the old partnership among Anthony and his sons was dissolved to give place to the Zellerbach Paper Company, a corporation with a few employee stockholders in addition to the Zellerbach family.

Up to 1914 the Company occupied itself exclusively with merchandising. Through the organization in that year of the National Paper Products Company and later on of the Washington Pulp and Paper Corporation, the operations of the company were extended to the manufacture of towels and tissue, box board and newsprint.

To simplify the business structure which had become cumbersome through the acquisition of manufacturing and power units, in 1924 the Zellerbach Corporation was organized with Isadore Zellerbach as president, and in 1928 it merged with the Crown Willamette Paper Company interests and the Crown Zellerbach Corporation was formed, with Mr. Zellerbach continuing as president of the new corporation.

With the death on August 7, 1941 of Isadore Zellerbach, the Pacific Coast lost one of its foremost business men. At the time of his passing, at the age of 75, Mr. Zellerbach was chairman of the board and director of Zellerbach Paper Company, chairman of the executive committee and director of Crown Zellerbach Corporation, vice-president and director of Rayonier Incorporated, director of Fibreboard Products Incorporated, vice-president and director of California Cotton Mills Company and vice-president and director of National Automotive Fibres, Inc.

Mr. Zellerbach was a member of the Fish and Game Commission of the State of California for 14 years, was a Past President of the National Paper Trade Association, and his club affiliations included the St. Francis Yacht Club, Concordia Club, and Commercial Club.

He is survived by his widow and three children, J. D. Zellerbach, Harold L. Zellerbach and Mrs. A. B. Saroni.

James M. Hamilton

James M. Hamilton, Jr., manager of the Cleveland branch of the River Raisin Paper Company, was instantly killed in an automobile accident on August 6 on the National highway, 23 miles east of Columbus, Ohio. Mr. Hamilton was driving one of two cars involved in a head-on collision in which both drivers were killed and four persons injured. The driver of the other car was Albert Rubin, 21, of Brookline, Massachusetts.

Mr. Hamilton, who was 40 years old and lived in Chagrin Falls, Ohio, has been continuously employed by the River Raisin Paper Company since 1923, working in the sales division prior to his appointment as manager of the Cleveland plant in 1935. Mr. Hamilton is survived by his widow, Florence, his father and mother and three brothers.

Funeral services were held in Cleveland, Ohio.

E. A. Travis

[FROM OUR REGULAR CORRESPONDENT]

WAUKESHA, Wis., August 11, 1941—E. A. Travis, 75, a resident here for many years, died Tuesday, August 5, following a major operation. He had been a Wisconsin sales representative for many years of the Standard Paper Company, Milwaukee, Wis. In his later years, he became well known for his hobby of developing beautiful flower gardens at his home. Survivors include his widow, a daughter, Lillian of Waukesha, and a son, Arthur of Milwaukee.

George W. Pauline

George Watson Pauline, vice president and managing director of the Alliance Paper Mills, Ltd., Toronto, Ont., Canada, and a director of the Howard Smith Paper Mills, Ltd., died August 17, at the age of 57. Mr. Pauline was born in Scotland, came to Canada in 1904 and entered business in Toronto. He was prominent in the Canadian Manufacturers Association and was a well-known golfer.

He leaves a widow, a son, a daughter and a sister.

Brazil Good Paper Market

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 20, 1941—A very good market exists in the Rio de Janeiro district of Brazil for American paper of various kinds, particularly news print, couche paper, and other papers for printing periodicals and books. There is little or no demand for wrapping paper since this is supplied by the domestic industry.

Deliveries Restricted

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., August 18, 1941—Restriction of deliveries continues to create a problem in the local paper market and the future, according to local executives is very uncertain. Demand both from defense industries and the regular domestic trade continued to mount last week and mills, apparently, were having more difficulty in meeting requirements. Just where the situation will end, no one seems to have a guess. Indiana mills have had little difficulty in the labor field, there having been no prolonged tieups during the year. They are working virtually to capacity and still can not fill the need. Some of them say they have been handicapped to a considerable extent by inability to secure raw materials, which has cut production to some extent.

The last week saw a further increase in demand for building and roofing papers. Building permits, after a short sag during the extremely hot weather, rebounded in this entire area. Prices in all lines of building and roofing papers are strong and supplies in dealers hands are light and in some instances the stocks are poorly balanced.

Demand for newsprint continues heavy in this section with supplies low and prices firm to strong. The volume since the first of the year has been considerably higher than a year ago and with the fall season arriving, to be followed by the holiday advertising rush, newspapers are becoming worried concerning supplies. Fine paper demand continued heavy last week with covers, books and ledgers all moving nicely. Prices were firm with prospects of slightly higher adjustments. Larger printers in this section have much work now in the shops and considerably more scheduled for fall.

Bag and wrapping demand continued good, following closely the increases being recorded in retail trade generally. Prices were firm. Tissues also were strong. Demand for all summer specialties continued good and with mild weather the trade expects to see a good demand until after Labor Day at least.

The rag market continued firm to strong. Local waste paper plants say mill demand is strong both for rags and most grades of paper.

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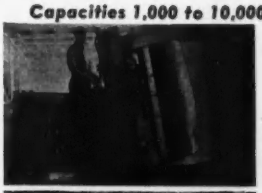
MODERN Electric Propelled INDUSTRIAL TRUCKS

FOR ECONOMICAL MATERIALS HANDLING

- LOW AND HIGH LIFT TRUCKS
- FORK TRUCKS
- PULP AND BALE HANDLERS
- PAPER ROLL HANDLERS
- LOAD CARRIERS
- TRACTORS — CRANES

Capacities 1,000 to 10,000 Lbs.

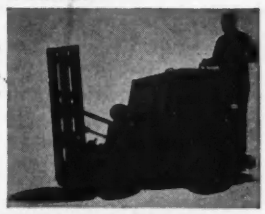


☆ Center-Control 3000 to 6000 lb. capacity motorized revolving paper roll handlers.

Heavy-duty, center-control fork trucks—telescopic tilting, tiering type for low-cost roll storage and transportation. Capacities 3000 to 6000 lbs.

☆ Center-Control 6000 to 7000 lb. capacity heavy-duty, motorized revolving paper roll handlers.

☆ Box-car bale and roll unloader for single tier storage. 1500 to 2500 lbs.



☆ Box-cars can be loaded and unloaded in record time — with motorized roll upender. Capacities up to 3000 lbs.

☆ Chisel type pulp handlers for box-car loading, unloading and stacking.

☆ 6000 lb. capacity low-lift and high-lift trucks for skid transportation of small rolls and flat stock.

Listed Under Reexamination Service of UNDERWRITERS' LABORATORIES

AUTOMATIC TRANSPORTATION CO.

Div. of the Yale & Towne Mfg. Co.

78 W. 87th St. CHICAGO, ILL.

Agree on N. Y. Waste Paper Prices

Five New Jersey companies were among twenty producers of paperboard and building paper in the New York area who have agreed with the Office of Price Administration and Civilian Supply not to bid more for low-grade waste paper than the "New York" prices set last month by O. P. A. C. S. and waste-paper dealers.

Included in the new agreements, effective last Friday, were Federal Paper Board Company, Inc., Bogota; Clifton Paperboard Company, Clifton; Continental Paper Company, Ridgefield Park; McEwan Brothers, Inc., Whippany, and Kieckhefer Container Company, Camden.

The "New York" prices are $11.50 a ton for No. 1 mixed paper, $13 a ton for No. 1 baled news and $16.50 a ton for used corrugated boxes, all f.o.b. cars, New York. The agreement on bids will remain in force until October 1.

PAPER TRADE JOURNAL

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COMING EVENTS IN PAPER INDUSTRY

New England Section. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

Delaware Valley Section. Technical Association of the Pulp and Paper Industry—First Friday of each month at the Engineers Club. Philadelphia, Pa.

Lake States Section. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

Kalamazoo Valley Section. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

Technical Association of the Pulp and Paper Industry, Fall Meeting, Ann Arbor, Mich., September 16-19.

National Paper Trade Association, annual Fall Meeting, Stevens Hotel, Chicago, Ill. September 15-17.

SHORTAGE OF MATERIALS

The great magnitude of the requirements for self defense is continually being unfolded. As the unprecedented needs for military uses rapidly increases the number of basic materials continues to be priorated in new orders being issued by the Division of Priorities, of which E. P. Stettinius, Jr., is director. In commenting on this phase of governmental activity, the Chamber of Commerce of the United States states that, "To get an accurate picture of the extent to which shortages of basic materials are beginning to appear in both defense and non-defense industries, the Chamber has started an inquiry among nearly 6,000 manufacturers within the Chamber's membership to learn the immediate situations in a broad range of manufacturing industries. Already it is evident that the pinch of scarcity is beginning to be widely felt. Letters reaching the Chamber's offices tell of hardships due to difficulties in getting adequate supplies of raw materials and semi-finished products in view of the growing demand of the defense program. However, there has not yet been presented any comprehensive appraisal of the situation as a whole."

In reference to the difficult adjustments which many industries are forced to make, the statement says in part that, "Industry dislocations arising from a scarcity of materials are occurring not only in industrial using materials such as aluminum, zinc, copper and chromium but also in those using materials of a less conspicuous character. Lack of Norwegian pulp, nickel from Canada, mica from the Orient, and mercury, for instance, all leave an impact on industrial production . . . Conferences have been underway between certain industries and defense officials as to possible voluntary curtailments. This procedure is described as intended to reduce drastically the need for an elaborate and complex system of priority regulations for a wide range of civilian industry which cannot greatly cut output without danger to the welfare of the public. Manufacturers express the hope that a more systematic approach to the problem of curtailment can be worked out. The situation requires the fullest understanding of all factors, particularly so as to avoid widespread unemployment at a time when stability in employment is so much an economic necessity. Already have appeared instances of unemployment due to sudden stoppages in the flow of materials to industrial plants."

The orders that have been issued on basic metals and some chemicals are of importance to the paper and pulp industry. A recent summary issued by the American Paper and Pulp Association states that, in addition to the 29 items controlled directly by the Priorities Division, the Priorities Critical List contains approximately 300 items and classes of items (most of them military in character but some of them raw materials) on which Army and Navy orders can automatically be given priority. The Priorities Critical List is maintained by the Priorities Division so that an authorized Army or Navy contracting officer, in awarding a contract for many of the items listed, may assign a preference rating to that contract if this is necessary in order to obtain the desired material in the necessary quantities and on the required delivery date. Although some of these 300 items are under industry-wide control, most of them are subject to control only in the sense that Army and Navy orders can automatically be granted priority.

The general preference order No. M-19, on chlorine, issued by the Director of Priorities states that the national defense requirements have created a shortage of chlorine, for defense, for private account and for export, and it is necessary, in the public interest and to promote the defense of the United States, to conserve the supply and direct the distribution of chlorine. Paragraphs 6, 7 and 8 of the order state that, after providing for all deliveries under Defense Orders, giving preference among such deliveries in accordance with any preference ratings specifically assigned thereto, producers may make deliveries of chlorine under other contracts or orders without limitation until otherwise directed by the Director of Priorities. Any allocations made or any preference rating or other directions issued by the Director of Priorities with respect to the residual supply of chlorine after the satisfaction of all defense requirements, direct or indirect, will be in accordance with such program as the Office of Price Administration and Civilian Supply may determine. Whenever there is doubt as to the preference rating applicable to any delivery, or whether an order or contract placed or offered to be placed, constitutes a Defense Order, the

matter should be referred to the Division of Priorities for determination with a statement of all pertinent facts.

The residual supply of chlorine has thus become of major importance and grave concern to the paper industry. Many meetings between the OPM and the interests of the industry have been held and while no very late reports have been made public by the Priorities Division of the Office of Production and Civilian Supply, the importance of chlorine in maintaining the present high brightness standards in paper, makes any substantial curtailment of this chemical a most difficult problem for the paper and pulp industry to satisfactorily meet. As there appears to be no adequate substitute for chlorine under manufacturing methods which have for some time prevailed, a compromise seems inevitable and a lower brightness standard throughout the various grades of paper, seems destined to follow the scarcity of chlorine for civilian or non-defense goods.

Handling Priority Matters

WASHINGTON, D. C., August 20, 1941—E. R. Stettinius, Jr., director of priorities has issued a statement suggesting that manufacturers and producers specifically assign special members of their staffs to handle priority matters.

A number of producers and manufacturers have already appointed priority specialists on their staffs to handle such problems, so that all priority matters can be cleared through one central office.

Mr. Stettinius said:

"As the defense program continues and as shortages increase in a number of scarce materials, manufacturers and producers will find themselves faced with an increasing number of procedure problems.

"The solution of these problems may be expedited if some member or members of the staff are assigned specifically to the handling of priority problems and procedures.

"If this is done the manufacturing plant will always have available competent advice within its own organization on how priority problems can be handled and expedited."

Mr. Stettinius added that when necessary, the Priorities Division will be prepared to hold training courses in priorities matters and procedures for the benefit of priorities specialists within homogeneous industrial groups.

Paper Index Rises in June

WASHINGTON, D. C., August 20, 1941—Index of the value of paper manufacturers inventories in June was 110.6 compared with 109.5 in May and 104.0 in June of last year taking December 31, 1938 at 100 according to the monthly survey of the Department of Commerce.

June index of the value of paper manufacturers shipments was 172 compared with 168 in May and 142 in June of last year taking January, 1939 at 100 according to the Department's figures.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks, 1941		Corresponding Weeks, 1940	
July 5 (Holiday Week)	73.5	July 6	69.0
July 12	95.8	July 13	91.1
July 19	100.4	July 20	91.3
July 26	101.9	July 27	87.6
August 2	100.7	August 3	87.4
August 9 (Prelim.)	*102.3*	August 10	87.9

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July
1940	89.1	84.7	82.3	84.3	90.0	92.1	85.3
1941	85.6	89.7	92.3	96.4	98.9	99.5	*95.0*

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1940	85.1	81.5	85.5	84.9	80.9	85.6
1941	...	...	...	...	...	...

COMPARATIVE YEARLY SUMMARIES

	1935	1936	1937	1938	1939	1940	1941
Year to Date	68.4	77.9	87.4	68.2	78.7	87.0	*93.9*
Year Average	69.9	80.4	79.8	71.5	83.4	85.6	...

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS †

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1936	62	67	67	70	69	70	69	75	78	82	80	74	72
1937	80	86	86	88	85	77	66	74	69	65	55	45	73
1938	54	60	61	57	58	56	57	66	66	70	65	59	61
1939	60	67	71	69	64	67	63	72	74	84	81	71	70
1940	71	70	69	70	76	79	72	74	72	79	77	71	73
1941	75	81	82	83	84	88	*86*	..	..	..	..	..	..

Week ending July 5, 1941—74
Week ending July 12, 1941—77
Week ending July 19, 1941—92
Week ending July 26, 1941—92
Week ending Aug. 2, 1941—93
Week ending Aug. 9, 1941—*91*

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Assn.

Mill Workers Given Vitamin Pills

[FROM OUR REGULAR CORRESPONDENT]

ST. HELENS, Ore., August 16, 1941—In the interests of health and efficiency, workers at the St. Helens Pulp and Paper Company began taking a daily pill containing vitamin concentrate recently. The vitamins are "on" the company, which is paying the extra cost of providing this health insurance, but taking the diminutive pills is strictly up to the individual worker. If he feels like helping himself he can have all the vitamin pills he wants—although it is recommended that he take only one a day—or he can leave the pills entirely alone.

What the paper mill worker gets when he gulps down the vitamin capsule with the aid of a glass of water is a pill holding 10,000 units of vitamin A, 1,000 units of vitamin D, 100 of vitamin B-1 and 50 of vitamin G. The result of this wholesale use of vitamin tablets, experience has shown, is that the entire crew should be healthier, more fit and consequently the men themselves will miss fewer working days because of illness.

The action by the paper mill management was taken as a result of a request by the hospital committees of the two unions at the mill. A supply of the vitamin concentrates has been placed near every drinking fountain where they are available to all workers on every shift.

By taking this step the paper mill becomes one of the first northwest industries to adopt this measure to keep its employees in good health.

Workers at the paper mill should be fairly familiar with pills, however—the company also provides salt tablets for hot weather use to lessen fatigue, so it is expected the vitamin concentrates will be "sold" without much difficulty.

"Please go away!"

. . . PLEADED THE SEASICK MAN ON PAGE 77 TO THE GOURMAND ON PAGE 78

"Impossible!" said the gourmand, wiping some gravy from his chin. "I belong to the next page . . . *show-through,* you know. Here — have a pork chop. Maybe you'll feel better!"

"O-o-ooh!" groaned the seasick man. "I'm *dying!*"

"I can see you've no appetite!" said the gourmand, sympathetically. "What you need are Krebs Pigments!"

"I just want to be alone!"

"That's exactly why you should tell your paper manufacturer about Krebs," the gourmand explained. "These pigments make the thinnest paper opaque . . . clean and white, too! And printing stands out sharply on both sides—just like the raisins in a dish of rice pudding!"

"Ulp . . . !" said the seasick man.

"Did you say 'help'?" asked the gourmand. "Because the Krebs people are a great help when it comes to solving technical pigment problems!"

"E-ex-excuse me," said the seasick man in a weak voice. "I think I'll be g-going . . . "

"Hold on," said the gourmand. "All you have to do is write!"

KREBS PIGMENT & COLOR CORP.
1007 Orange Street...Wilmington, Delaware

Section of the
Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

Chemical and Physical Characteristics of Soda Pulp

By John Frankevicz[1] and N. I. Bearse[2]

Abstract

The following conditions of manufacture were first determined: consistency before bleach thickener 0.58%, consistency after thickener 4%, color of thickener filtrate 50, K number of unbleached 11.0, brightness of unbleached 40, consistency of bleached 3.5%, excess bleach 4.0 brightness of bleached 67, K number of bleached 2.0, alpha-cellulose 87.7%, freeness 820, freeness drop 120, beater values 34, 56.

High brightness pulps bleached with pH controlled at 10 to 11, showed rapid slowness development and low strength, in spite of a comparatively high alpha-cellulose content (TAPPI Standard T 203 m-40).

Handsheet tests indicated that soda blended with similarly treated sulphite will give strength results proportionally between those of the 100% soda and 100% sulphite sheets. Opacity, bulk, and freeness were not predictable.

Points of mill control are recommended as follows: consistency to washer, thickness of washer cake, color of thickener filtrate, chlorine equivalent to bleacher, pH in bleacher, time in storage before washing, and refining treatment.

The material presented in this paper is the result of investigations by a paper mill laboratory into some of the phases of soda pulp manufacture. The scope is quite broad and the penetration not deep. However, considerable work has been done and the presenting of it at this time may bring helpful guidance in its continuation from those who are working, or have worked, along similar lines.

The original project was to define the characteristics of the soda pulp, then being made, so that it could be reproduced after contemplated changes in soda mill equipment. This led to a study of the causes for variations in characteristics and to prescription of control methods to decrease such variation. The knowledge thus gained led, optimistically, to possibilities of gilding the lily and developing a soda pulp better suited to the particular needs of this mill. This latter ambition, as you will see, has not been realized but optimism still beckons.

[1] Chief Chemist, Champion-International Co., Lawrence, Mass.
[2] Member TAPPI, Technical Director, Champion-International Co., Lawrence, Mass.

The Present Soda Pulp

Selected as qualities suited to define the pulp were first: brightness, freeness drop, beater value, alpha-cellulose, and permanganate number. Added as further guides were: excess bleach, consistency in bleach tanks, brightness and permanganate number of the unbleached pulp, color of thickener filtrate, consistency before and after thickener, and pH of the pulp before and after bleaching. In general it can be described as semibleached pulp with rather slow response to beating action, of unusually good tear and burst (mullen) strength and high alpha-cellulose. A summary of this work (18 tests) is shown in Table I.

Investigation of Variables

The investigation which followed of the causes for variations given in Table I resulted in many findings of local interest and some of these results are given briefly as they are descriptive of the nature of this soda pulp.

TABLE I.—CHARACTERISTICS OF MILL BLEACHED SODA

Property	Average	Variation		Description of Tests
Brightness	67	70	65	Reflection meter
Freeness	820	830	810	Schopper-Riegler
Freeness drop	120	125	100	2 hours in pebble mill
Beater value	34/56	30/50	36/58	B.V. = ¼% tear and ½% Burst (1)
17.5% Caustic insolubles	87.7	86	88	TAPPI Standard T 203 m
pH of bleached	7.2	7.5	7.0	Electrometer
Permanganate number bleached	2.0	3.4	1.7	Oestrand
Brightness of unbleached	40	42	36	.....
Permanganate number unbleached	11	14.3	10.1	Oestrand
pH of unbleached	9.8	10	9.5	.....

(1) Following the bleaching operation, if there is a storage period before washing, the Pulp will improve in brightness until residual chlorine falls to 0.2% after which brightness will be lost (Fig. 1).

(2) Promptly washed pulp (from digesters) had a lower permanganate number than pulp which had remained sometime in the cooking liquor. Fresh pulp seemed to wash better and to a lighter color, and hot wash water has an evident advantage over cool water.

(3) It was found that lack of uniformity was resulting from variation in load on the washer handling pulp from the digesters. Cake thickness varies and consequently the pulp and water going to the bleachers carried more or less bleach-consuming material.

(4) An attempt was made to arrive at a permanganate number : per cent chlorine relationship to predict bleach requirement. As a result of the formula K times no. 0.32 equals % Cl, was proposed for trial in the mill. Koon (2) stated that permanganate number gives valuable information as to relative amounts of noncellulose materials, although not sufficiently accurate for mill operation.

Control Methods

As a result of the above findings, the following

procedures were suggested as control in the mill:

(1) Ahead of the first washer: a constant flowbox, thermostat, and automatic consistency regulator.
(2) At the washer: maintain uniform cake thickness, cake consistency, and record K number.
(3) At the thickner: hold color of filtrate to a standard and maintain uniform consistency.
(4) At bleachers: add chlorine equivalent from established K no.—% Cl ratio.
(5) In storage before washing: maintain excess bleach to 2 units, and limit the time of storage.
(6) Final washer: test for complete removal of bleach residue.

Strength Tests and Alpha-Cellulose

The next series of tests were a start toward finding a chemical method for bleached pulp evaluation. It was suggested that 17.5% caustic solubility (TAPPI alpha-cellulose) would be a measure of the destruction of strength contributing ingredients of the pulp. In preliminary tests bleached pulp showed a loss in strength but a higher alpha-cellulose. It was decided, however, to follow this relationship through a series of pulps bleached to different brightnesses, and to study the effect on this relationship of bleaching at higher pH. The solid line in Fig. 2 seems well founded from the large number of actual tests which conform—i.e., there is a slight drop in alpha for increase in brightness 60 to 70, more rapid drop after 70. The dotted line seems strongly indicated from a few test results, where the pH was maintained well above the normal unbuffered bleachings. Here, there is a slight but uniform drop in alpha for brightness 60 to 82. The alkali used was hydrated lime (4 to 0.8%) and the intent was to preserve alkali insolubles and strength. Curves in Fig. 3 show for unbuffered bleachings the progressive drop in alpha, burst, tear, and fold, as the pulp is bleached to higher brightness (single stage hypochlorite). TAPPI Standard alpha determination (T 203 m) were made on unbeaten pulp; burst, tear, fold, and freeness drop on handsheets after two hours pebble mill treatment. The points plotted are averages of from 4 to 6 tests.

To show the influence of maintaining high pH (11.4) during bleaching, the crosses are inserted in Fig. 3 at brightness 78. These indicate that in spite of relatively high caustic insolubility for a given brightness, the strength is no better than for the

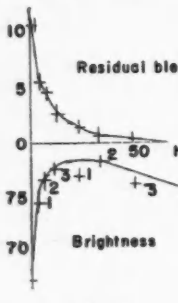

Fig. 1

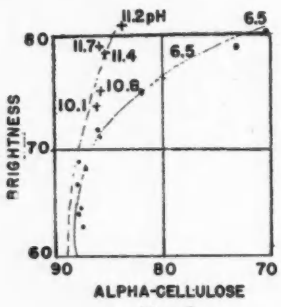

Fig. 2

Fig. 1—Consumption of Bleach and Accompanying Brightness Changes for Unwashed Bleached Soda. Fig. 2—Effect of Adding Alkali while Bleaching on the Alpha Content of Soda Pulp.

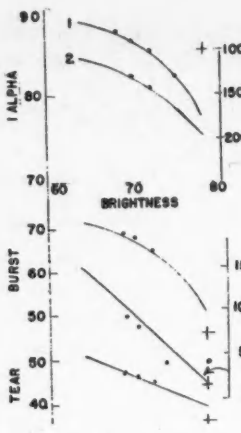

Fig. 3

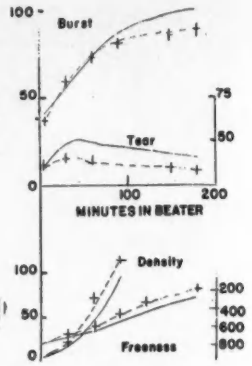

Fig. 4

Fig. 3—Strength Tests as Soda is Bleached to Increased Brightness. Fig. 4—Beater Tests on Semi-bleached *vs.* More Highly Bleached Pulp

corresponding unbuffered pulp. A complete laboratory beater run was made to compare pulp of 70 brightness — alpha 85.1 against the same pulp with additional bleaching to 73.2 brightness — alpha 86.1 (*see* Fig. 4). Here too the additional bleaching, although alpha was preserved, caused loss in burst and tear and more rapid development of density and slowness. Table II gives additional evidence in the brightness — alpha-cellulose — strength relationship. Included are four separate examples where a sample of mill bleached pulp is compared against itself after further bleaching with and without pH control.

There were two soda pulp samples from outside mills available, and they are compared in Table III against the soda sample (C-I) of the previous tests. Sample 1 by comparison with C-I soda is low in alpha and strength for equal brightness and has a high freeness drop. Sample 2 is similar to sample 1 in strength, somewhat higher in alpha, and about equal to C-I soda in freeness drop.

TABLE III.—COMPARISON OF SODA PULPS FROM DIFFERENT SOURCES

	Sample 1	C. I. of brightness 74.6	Sample 2	C. I. of brightness 70.1	C. I. of alpha 77
Brightness	74.6	74.6	70.1	70.1	78.0
Alpha-cellulose	60.7	81.5	77	86	77
Burst	33	58	39	67	50
Tear	24	42	28	46	39
Freeness drop	225	160	120	130	195
Fold	4	50	6	75	20

Strength of Soda-Sulphite Blends

Among the qualities desired in a soda pulp by this mill is adequate strength when used with sulphite. With this in mind an effort was made to determine the contribution of soda to strength. For the first tests, soda and bleached sulphite book were beaten separately, stock withdrawn at successive time intervals for making test sheets, half soda and half sulphite. Results from these test sheets were com-

TABLE II.—BRIGHTNESS, ALPHA-CELLULOSE, STRENGTH COMPARISONS

	Sample 1			Sample 2				Sample 3		Sample 4	
Brightness	65.8	80.4	78.8*	64.5	76.2	78.1	81.2*	70	73.2*	70.9	79.2*
Alpha	88.3	70.7	85.5	88.1	79.8	77.1	83.4	85.1	86.6	85.9	85.7
Burst	72	37	46	66	54	51	42	73	57	65	45
Tear	51	37	36	46	40	39	36	47	38	42	38
Fold	130	11	16	141	41	30	15	85	26	46	14
Freeness drop	100	195	175	115	190	210	230	140	195	145	170

* pH held up.

pared (Fig. 5) with all soda, all sulphite, and half soda and half sulphite beaten together. Results on sheets of soda-sulphite are approximately the same, whether the pulps are beaten separately or together, and lie between those of the correspondingly treated separate furnishes.

To follow the effect of sodas of varying characteristics on sheet strength, when used with sulphite, test sheets were made of the following combinations:

Soda of Relatively Low Brightness and High Alpha from Mill
1. Unbeaten
2. Beaten 10 minutes
3. Beaten 30 minutes
4. Beaten 90 minutes

Item 1 Bleached in Laboratory to Higher Brightness, Maintaining same Alpha
5. Unbeaten
6. Item 5 beaten 10 minutes
7. Item 5 beaten 30 minutes
8. Item 5 beaten 90 minutes
9 to 16. Items 1 to 8 above—half and half with bleached sulphite which had 30 minutes beating

Figure 6 shows the beater test curves for the bleached soda (solid line), brighter bleached soda (dash-dot line) and the sulphite (dash line). Table IV gives results of tests when the sodas were mixed with sulphite.

Here again the more highly bleached (pH 11.4) soda is in general lower in strength, although its alpha-cellulose is about the same as the lower brightness pulp. Soda, when used with sulphite, contributes to burst, tear, pick-resistance, and freeness to a degree, close to what can be predicted by proportioning the values for the separate pulps. Fold is definitely lost in sheets of mixed pulp.

Description of Testing Methods

Brightness: Two hundred grams of 4% pulp were filtered, pad diluted with 400 cc. of water and again filtered, followed by three more such washings. The washed pad (5.25 inches diameter) was pressed between clean felts at 100 pounds per square inch for 1 minute, then dried at low temperature and conditioned at 65% relative humidity 70 deg. F. An average of six readings was taken on a reflection meter.

Excess Bleach: Enough slush pulp was taken to obtain 100 cc. of filtrate which is acidified with 10 cc. 5% of acetic acid and 10 cc. potassium iodide (70 grams per liter) added. The liberated iodine is titrated with 0.1N thiosulphate and the cubic centimeters required, reported as excess bleach.

Alpha-Cellulose: TAPPI Standard T 203 was used to determine the alpha-cellulose content, except that the temperature of tests was 21.1 deg. C. instead of 20 deg. C.

Permanganate Number: Two methods were used to obtain the K number, the early one by Oestrand methods and the later ones by Wiles method.

Hydrogen Ion Concentration: By Coleman electrometer.

Pebble Mill Tests: The mill has a volume, without stones, of 4500 cc., rotates 48 revolutions per minute, and uses 449 stones weighing 7.85 pounds. Stock (20 grams in 2 liters) treated 2 hours, thickened on 100-mesh screen, stones removed, diluted to 2 liters, 340 cc. of which is used to make a test sheet on an 8 by 8-inch Valley sheet mold. After couchings, sheets are pressed at 100 pounds per square inch for 1 minute, then put between felts pressed down with a 50-pound weight and left over night. Sheets are conditioned at 65% relative humidity at 70 deg. F., trimmed to 7 by 7 inches and tested. The moisture-free basis weight is calculated on the assumption that sheets so conditioned contain 9% moisture.

Laboratory Beater Test: One and one quarter pounds of moisture-free pulp at 2.3% consistency in the standard laboratory beater (10 pounds weight on bedplate). Sheets made as for pebble mill tests.

Tear: Double thickness of test sheet on Elmendorf machine, reading multiplied by 8, corrected to basis weight of 50 pounds (25x40—500).

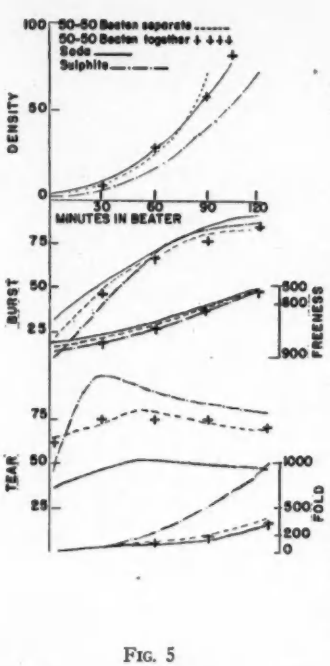

FIG. 5

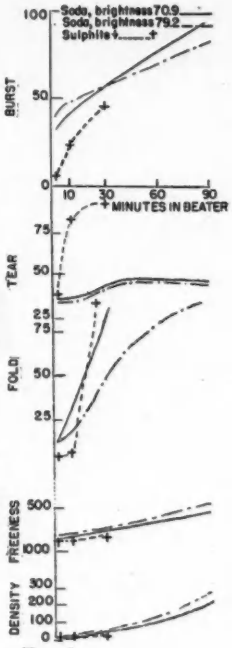

FIG. 6

FIG. 5—Beater Tests on Soda, Sulphite and Soda-Sulphite Blends.
FIG. 6—Beater Tests on Pulps Used in Blends in Table IV

Burst: Perkins, electric driven, expressed as test of 100-pound sheet 25x40—500.

Fold: Average of 1 test on 4 separate sheets of basis weight, 60 pounds.

Density: Gurley-Hill S P S tester, average of 4 tests on 4 separate sheets of basis weight, 60 pounds.

Freeness: Schopper-Riegler.

Pick: Dennison graded waxes.

Discussion of Results

While the work is subject to further extension and confirmation, there are definite indications as follows: (a) Soda pulp for the same brightness can vary widely in alpha content. (b) Soda pulp for the same alpha can vary widely in strength. (c) Bleaching at high pH will give a soda pulp higher in alpha-cellulose than if bleached to the same brightness without addition of alkali. (d) High alpha alone does not give a soda pulp of high strength, or one that resists slowness development. (e) Soda and sulphite in a 50-50 blend gives the same sheet characteristics, whether beaten together or separately. (f) In sheets of half sulphite and half soda, each pulp contributes proportionately to tear, burst, and pick-resistance, but fold is abnormally low.

Soda pulp for the purpose in view must be used with sulphite (or other supplementary fiber) to produce paper that will, when coated, be suitable for

TABLE IV.—EFFECT ON SHEET PROPERTIES OF BLENDING SODA AND SULPHITE

	Soda of 70.9 Brightness				50-50 Soda-Sulphite Blends, actual tests — Calculated ave. of soda and sulphite alone				30 min. beaten sulphite used for 50-50 blends
Soda beating time, minutes	0	10	30	90	0	10	30	90	
Burst	33	42	61	87	42/44	49/48	55/58	71/70	54
Tear	36	34	44	45	70/69	76/67	69/72	76/72	100
Fold	12	16	89	276	39/92	47/94	37/130	107/224	172
Density	4	8	19	218	6/7	7/8+	11/14	43/113	9
Freeness	815	800	770	580	815/815	810/807	795/792	705/697	815
Pick	2—	3—	6+	14	5—/5	7+/6+	7/8	11/11+	9
	Soda of 79.2 Brightness								
Burst	37	48	57	76	41/45	46/51	55/56	67/65	54
Tear	34	36	43	42	73/67	71/68	76/72	68/71	100
Fold	11	15	52	90	25/57	31/59	52/76	90/96	102
Density	5	10	27	276	5/7	8/9+	15/18	55/142	9
Freeness	800	785	735	450	820/810	815/800	780/777	660/635	820
Pick	1+	3	7+	14	5—/6	6—/7	9+/8+	11+/11+	11

general printing use. This means, it must coat well, finish to a level uniform bright surface, have sufficient resistance to tearing and splitting and have good cushion and resistance to dimensional changes. Adding to these requirements, those which are dictated by manufacturing expediency, the desired soda seems to be one produced with high yield and low chemical cost, of good brightness after some development of bonding strength, good tearing resistance and flexibility. To venture into chemical definition, this probably means fibers where lignin is reduced to a minimum, hemicellulose is held to limited previously determined amounts, and alpha-cellulose is preserved in its original chain length.

A start has been made toward prescribing methods for manufacturing such a soda, but much more fundamental information must be obtained before it can be assured. Brauns and Grimes *(3)* reported data on the relative rates of solution, during the cook of lignin and the carbohydrates as have Nolan and McCready *(4)*. Much inspiration can be gained from the considerable work on various modifications of bleaching by Rue *(5)* Parsons and Jackson *(6)*, Hisey and Koon *(7)* and others, who indicate that the bleaching processes can be controlled to preserve the strength of pulp. Kraft *(8)* Schmid *(9)* Loeschbrand *(10)* and Phelps and Schuber *(11)* offer the encouragement that degradation of cellulose by acids formed in bleaching are not great. Houtz and Kurth *(12)* state the desirability of retaining hemicellulose and that degradation products have some influence on hydration. Obermanns *(13)* showed that hemicellulosic material caused more rapid hydration and increase of strength characteristics. Then too, consideration must be given to the effect, in the paper produced, of nonfibrous materials, water, size, and filler.

The soda described in the first part of this paper was not high in brightness, but other characteristics (yield, strength, flexibility) were good and changes are to be made cautiously to avoid losing more than is gained, as for example the strength loss of the pulp bleached at high pH, due probably to a depolymerization of alpha-cellulose. Staudinger and Jurish *(14)* found that oxidation of cellulose results in a lower degree of polymerization, and several, workers Rue *(15)*, Carmody and Mears *(16)*, and Phelps and Schuber *(11)* have established that hypochlorite oxidizes, and that it exists at pH 8.0 and above. Viscosity tests would probably have made the data of this paper more complete, and such determinations will be included in the continuation of this work which is planned.

Acknowledgment

The authors gratefully acknowledge indebtedness to W. A. Chilson whose advice was helpful, and to P. K. Bonney and W. W. Stickland who did much of the testing.

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Requirements of Base Papers for Varnish Coatings

By Victor A. Ryan[1]

Abstract

Base papers, which are to be subsequently coated with baking varnishes, cannot be evaluated satisfactorily with the present conventional methods of paper testing.

With the knowledge that, in papers of this class, the resistance of the fibers to devitalization or embrittlement under the influence of heat is the property of paramount importance, it is shown that the Weller brittleness test for paper is a suitable method for the measurement of this property and that, when it is used in conjunction with Gurley density and pH value, it permits the setting up of requirements for base papers which will more completely indicate their probable performance in actual varnishing service.

Varnished papers are used for a diversified number of purposes and the requirements of the base paper, which acts as a carrier for the varnish film, will vary with respect to its physical and chemical properties, depending upon the specific treatment it receives in preparation for the service it must perform.

Consideration will be given, herein, only to those papers which are treated with oleo-resinous varnishes and subsequently baked at relatively high temperatures, such as the papers used for food closures and for electrical insulation. In these types of base papers, the baking temperatures encountered are rarely less than 280 deg. F. and may run as high as 325 deg. F., while the baking cycles run from 60 to 120 minutes, depending upon the number of coats of varnish applied. It is apparent that, in a paper of this type, heat resistance is the property of paramount importance.

It has been common practice to control the quality and uniformity of varnishing grades of base papers by such conventional paper tests as, thickness, apparent density, tensile strength, tearing resistance, bursting strength, density, moisture content, and ash. However well these conventional tests may control material from a given source of supply, they do not evaluate the paper with respect to its probable behavior in a relatively high temperature baking operation which has a tendency to devitalize or embrittle the fibers.

At the present time there is no standardized method of test for the measurement of heat resistance which undoubtedly accounts for the limited source of supply for varnishing grade papers. New sources of supply will not be available until some test method is adopted by the industry which will satisfactorily indicate the resistance of paper fibers to embrittlement when subjected to high temperature baking operations.

Attempts to indicate this property have been made by supplementing the conventional tests with such tests as acidity and folding endurance.

With the knowledge that acid papers tend to brittleness on baking, the acidity determination (and later the pH value) was tried as an effort to establish some relation between chemical composition and physical performance. The test was somewhat satisfactory on papers of similar fiber composition and not only unreliable but misleading on papers of dissimilar composition. Consequently, acidity (or the pH value) cannot be used with any degree of success.

Folding endurance was tried as an effort to establish some relation between initial fiber flexibility and baking performance but results on samples of the same paper vary so widely that a representative average value cannot be obtained, even when a large number of determinations are made. Consequently, the folding endurance test has no practical value as an indication of heat resistance.

Brittleness Test for Paper

The Weller test, which was first described by Bachmann *(1)* and later studied and analyzed by Peek and Finch *(2)* has been found to be a satisfactory method of measurement for the heat resistance of papers. After a preliminary study of the test, the author has been using it, with certain modifications, for the past several years with remarkable success, although he has not been able to have it adopted by suppliers.

The brittleness test is more or less based upon the fact that the tensile strength of two strips of paper is equal to twice the tensile strength of a single strip of the same paper. However, the brittleness test is made in such a manner that the brittleness strength value is equal to twice the tensile strength value only when the paper is apparently 100% flexible. When the apparent flexibility of the paper is less than 100%, the brittleness strength will be less than twice the tensile strength.

In making the brittleness test, the equivalent of two strips of paper is used in that one long specimen is bent over the edge of a steel plate rounded to form the half circumference of a circle of a specified ra-

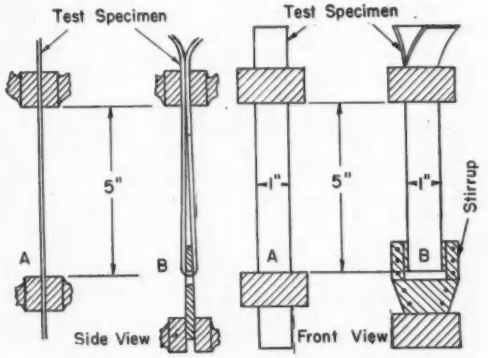

FIG. 1
A—Tensile Strength.

FIG. 2
B—Brittleness Strength

[1] Research Director, Crown Cork & Seal Company, Inc., Baltimore, Md.

dius. This plate is the bar of a stirrup which is clamped in the lower jaw of a tensile strength test machine; the two ends of the sample are clamped in the upper jaw, as shown in Fig. 2. The sample is then tested in the usual tensile test procedure, and the load at which the specimen breaks is the "brittleness strength."

Reference to Fig. 3 (which is an enlarged view of the stirrup bar with the test specimen bent around it) shows that, when a paper of 0.004 inch thickness is bent around a stirrup bar of 0.004 inch radius, the length of the inner half circumference, AB, will be π 0.004 inch, while that of the outer half circumference, CD, will be π 0.008 inch, or 100% greater. We know that in papers elongations of these magnitudes are impossible. Therefore fiber layer slippage must take place and it must be at a maximum on the outer layer, CD, and at a minimum on the inner layer, AB; the elongation, then, will be greater in the outer layers than in the inner, throughout the entire length of the sample, and the difference in length over the rounded edge of the stirrup bar will be distributed throughout the sample so that elongation at any one point will be reduced to a value somewhat less than 100% and within reason for paper. It is reasonable to assume that in flexible papers the fibers slip on one another with ease permitting the elongation without apparent impairment of strength, while in brittle papers the outer layers of fibers will not slip but rupture and break, thereby reducing the effective thickness of the specimen which causes failure at low values.

The brittleness strength test is of value only when used in relation to the tensile strength test of the same material, and the result should be expressed in some practical unit. Bachmann expressed his result as the "percentage brittleness," which was the difference between the tensile breaking strength and half the brittleness breaking strength; he employed a 0.005 inch radius stirrup bar for all thicknesses of paper. On the other hand, Peek and Finch in their study and analysis of the Weller test used at least two strrup bars of different radii on each sample and expressed their result in a mathematical equation based on tensile stress-strain relations and modulus of longitudinal shear. The Peek and Finch equation is an excellent means of deducing from the Weller test fundamental properties of paper from which its behavior under particular conditions may be predicted. Their methods of computation should prove to be of great value in fundamental research on fiber embrittlement.

Flexibility Index Test

The author prefers to group the tensile and brittleness strength tests together in a method which he designates as the flexibility index test. The result of this test is expressed in a simple mathematical formula which gives a relative value satisfactory for practical purposes.

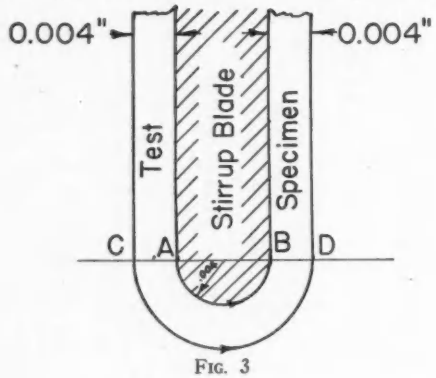

FIG. 3

The flexibility index test is carried out as follows:

In making both the tensile and brittleness tests, we use a Scott vertical tensile strength machine, motor driven, with a rate of travel of movable jaw of 12 inches per minute. For the brittleness test, we clamp the stirrup in the lower or movable jaw as shown in Fig. 2. Tensile test specimens are cut 1 inch wide by 10 inches long and brittleness test specimens 1 inch wide by 15 inches long. For the tensile test, the ratio of clearance distance between jaws to the width of the specimen is 5:1 as shown in Fig. 1.

For the brittleness test, the ratio of clearance distance between the upper jaw and the stirrup bar rounded edge to the width of the specimen is 5:1 as shown in Fig. 2. For the brittleness test, a stirrup bar is used which has a radius equal to the thickness of the paper being tested. This is done in order that the outer layer, *C D* (Fig. 3), will always be 100% greater in length than the inner layer, *A B*, for all papers.

The tensile strength value is the average of 10 determinations made on 10 different single strip specimens. The brittleness strength value is the average of 10 determinations made on 10 different doubled strip specimens. The tensile and brittleness strength tests are made on both the machine and cross-machine directions and the results are recorded as the number of pounds required to break the specimens.

The mean tensile strength is computed from the formula:

$$\text{Mean Tensile Strength} = \frac{Tm + Tc}{2} \qquad (1)$$

when Tm is the tensile strength of the machine direction, and Tc is the tensile strength of the cross-machine direction.

The mean brittleness strength is computed from the formula:

$$\text{Mean Brittleness Strength} = \frac{Bm + Bc}{2} \qquad (2)$$

when Bm is the brittleness strength of the machine direction, and Bc is the brittleness strength of the cross-machine direction.

The flexibility index is computed from the formula:

$$\text{Flexibility Index} = \frac{B}{2T}\,100 \qquad (3)$$

when B is the mean brittleness strength, and T is the mean tensile strength.

The flexibility index test is simple and can be carried out in a comparatively short time; it is a practical, dependable relative measurement of the flexibility of papers.

Heat Resistance Index Test

All papers tend to brittleness in some degree on baking, and, inasmuch as increasing brittleness is accompanied by decreasing flexibility, it is evident that the ratio of flexibility *after* heating to the flexibility *before* heating is a relative measurement of the heat resistance of papers.

This ratio is determined by the heat resistance index test which is carried out as follows:

Specimens, cut to the dimensions specified in the flexibility index test, are placed in an analytical type of electrically heated oven and baked for 90 minutes at 290 deg. F. to within $\pm$ ½ deg.

At the end of this period, the specimens are removed from the oven and allowed to condition for at least 15 hours at room temperature.

The specimens are then tested for flexibility index in accordance with the previously described method.

The heat resistance index is then computed from the formula:

$$\text{Heat Resistance Index} = \frac{FI - a}{FI - b} 100 \qquad (4)$$

when *FI-a* is the flexibility index after heating, and *FI-b* is the flexibility index before heating.

Effect of Baking on the Flexibility Index

It has been previously stated that acid papers tend to brittleness on baking; with this in mind baking tests were made on papers of high and low acidity, designated as 4.4 and 6.1 pH, respectively, over a temperature range of 175 to 290 deg. F. The results are shown in Fig. 4.

From the curves, interesting phenomena are observed—e.g., (1) the magnitude of the baking temperature has a decided effect on the flexibility index. (2) On the same grade of paper, the low acid (high pH) sample, represented by the solid line, is decidedly less effected than the high acid (low pH) sample, represented by the dotted line, showing that high acid papers tend to brittleness more than the low acid ones. (3) In any given acidity and baking temperature, the sulphate papers are less effected than the sulphite, showing that fiber composition is a contributing factor to brittleness equally as important as the acidity. (4) Practical experience has determined the fact that papers with less than 80.75 flexibility index, after baking, are unsatisfactory for high temperature varnishing work and these curves then clearly indicate that both the B and D grades of kraft paper of 6.1 pH can be baked at any temperature up to the maximum encountered in service, namely, 325 deg. F.; they further indicate that, in the case of the 4.4 pH samples, the B kraft should not be baked over 240 deg. F. and the D kraft not over 250 deg. F.; in the case of the sulphite papers it is seen that the 6.1 pH sample would

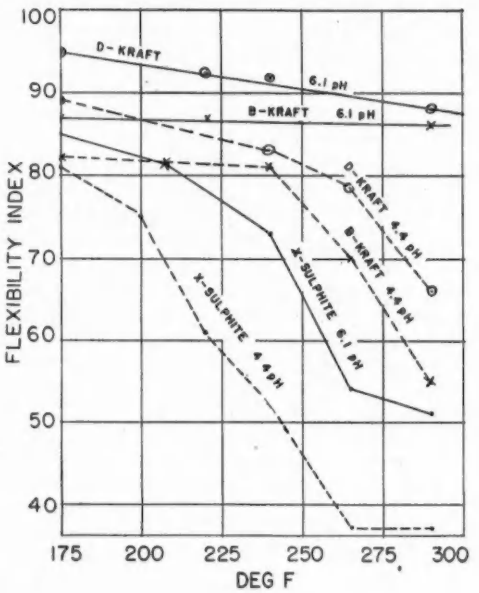

FIG. 4
Effect of Temperature of 90-Minute Bakings on Flexibility of Paper

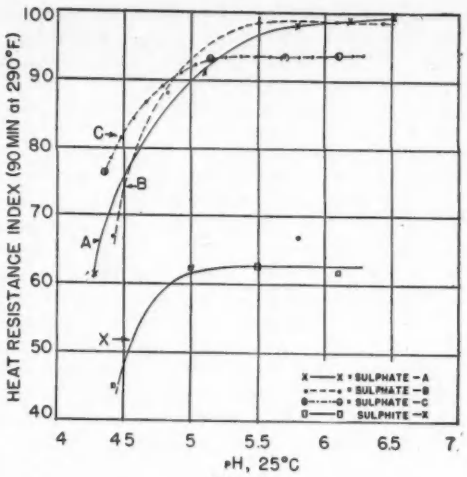

FIG. 5
Effect of pH on Heat Resistance of Paper

be limited to not over a 210 deg. F. bake, while the 4.4 pH sample could not be baked at any temperature over 175 deg. F. (5) The curves finally indicate that the flexibility index test can be advantageously used to determine, for any paper, the critical baking temperature which should not be exceeded in the varnishing operation.

Effect of pH Value on Heat Resistance

In an effort to ascertain whether or not any definite well coordinated relation exists between acidity and heat resistance, the records of tests on a number of carloads of paper (received during a period of 3 years) were compiled and the pH values were plotted against the respective heat resistance index values. The results are shown in Fig. 5, in which Curves A, B, and C represent sulphate papers from three different sources of supply, while Curve X represents an all sulphite sheet which is not used for varnishing and was merely included for comparative purposes.

Sulphates A and B represent the same grade of 0.004 inch thick supercalendered kraft paper from two different suppliers, while the sulphate C represents a 0.0045 inch thick water-finished kraft paper from one source of supply. The sulphite X is a 0.004 inch thick tag stock.

Figure 5 shows that (1) There is a well coordinated relation between acidity, as represented by the pH value, and heat resistance; and that the pH value is indicative of heat resistance only when it is a question of papers of similar composition. With papers of dissimilar composition, the pH does not indicate heat resistance. For example, in the sulphite paper (Curve X) a pH of 5.0 indicates a heat resistance index of 62.5, while in the case of the sulphate papers (Curves A, B and C) it indicates a heat resistance index of from 90 to 93. (2) That, with decreasing acidity (increasing pH value), the heat resistance rises rapidly until a critical pH value is reached, at which point the curve flattens out; there is very little heat resistance gained beyond this critical point. Furthermore, it appears that each paper has its own critical pH value, which, in the case of similar papers such as, A and B, varies slightly with the source of supply For example, the critical pH value for sulphate A is 5.8, for sulphate B, 5.5

and for sulphate C, 5.15. (3) That, if an attempt is made to use the pH value to control the heat resistance, either a separate value for each source of supply will have to be specified or a point will have to be taken on the flat portion of the curve which will satisfy the heat resistance requirements of all similar papers used for a given purpose; such as, a value of 6.1 pH to satisfy the requirements of sulphates A, B and C. Furthermore, in consideration of the unsatisfactory heat resistance corresponding to 6.1 pH for sulphite X, it is evident that it would be necessary, in conjunction with the pH, to specify fiber composition with all its attendant misunderstandings in case of dispute between supplier and consumer.

It is apparent now that the heat resistance index test is a suitable method for indicating heat resistance and that it can be used to evaluate papers in this respect regardless of their fiber composition or pH value.

Density Effects

It has long been known, and believed, that the amount of varnish absorbed by paper is in inverse ratio to the Gurley density. Actual practice has confirmed this fact. However, the author has no recollection of any data in the literature to prove this claim and therefore offers the data in Fig. 6 as qualitative substantiation.

We know from practice that the brittleness of varnished papers increases with the amount of penetration of varnish into the fibers and interstices of the sheet. Therefore the flexibility index of a varnished paper will decrease with increasing penetration of varnish, which establishes the fact that the amount of varnish absorbed by paper is in inverse ratio to the flexibility index.

Now, if both the density and the flexibility index are in inverse ratio to the amount of varnish absorbed by paper, they are in direct ratio to one another and, consequently, the flexibility index will increase with increasing Density. This fact is confirmed by the curves in Fig. 6, which show that, with increasing density of the base paper, less varnish is absorbed and increasing flexibility of the varnished paper results.

In connection with the curves shown, some explanation is necessary as to why the B kraft paper shows minimum absorption at 400 seconds, while, at the same value, the D kraft shows maximum absorption. The answer lies in the complexity of paper structure coupled with customer requirements.

The B kraft 6.1 sample is a supercalendered northern kraft paper which ordinarily runs between 100 and 150 seconds; it is on this paper that customers do not want penetration and a minimum 300-second Gurley must be specified to satisfy the requirement.

The D kraft 6.1 sample is a waterfinished kraft

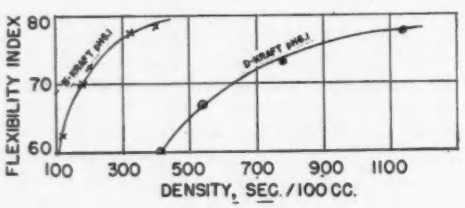

FIG. 6

Effect of Gurley Density of Base Paper on Flexibility of Varnished Paper

of complex structure that ordinarily runs between 900 and 1100 seconds; it is on this paper that customers want maximum penetration. After considerable experimenting, the mill was able to get down to 450 to 550 seconds, which was still too dense for penetration. However, the mill could do no better and our specification stands at maximum 550 seconds. In order to get penetration at this density it was necessary to reduce the consistency of the varnish and add to it an ingredient to change the interfacial tension between the paper and the liquid varnish to effect the necessary degree of penetration.

The difference between the two curves is therefore explained by the use of a different type of base varnish on the D kraft 6.1 sample.

Base Paper Requirements

In setting up requirements for the desired chemical and physical properties of a material it is not only necessary to have accurate and dependable methods of test for measuring the magnitude of the specified properties but also necessary to be able to correlate the test results with each other and with the actual performance of the material in service.

The lack of a method of measurement for flexibility and heat resistance has been responsible for the fact that complete requirements could not be set up covering base papers for use in varnishing because, without it, there was no way to predict or indicate behavior in a baking operation and papers could not be satisfactorily specified.

In view of the data presented, it is now felt that the flexibility index test and the heat resistance index test can be correlated with actual baking behavior and can be used in conjunction with the conventional paper tests now in use to set up complete requirements of base papers for varnish coatings.

The requirements for paper, and in fact any material, depend entirely upon the ultimate use to which it is put and to the manufacturing operations through which it must pass. The kinds and uses of base papers for varnishing are so many and so diversified that a general specification covering the requirements could not be attempted.

All the papers now in use, which range from 0.0003 inch linen tissues, through the rag bonds and sulphate papers up to manilla hemps of 0.015 inch thickness, are satisfactory from the point of view of moisture content, ash, thickness, apparent density, and, chiefly, strength—tensile, tear, and burst. The only unsatisfactory feature has been the inability to specify and control *heat resistance*, the property of greatest importance. It now appears that this can be done satisfactorily.

Price has never been a controlling factor in the coating field, so nothing stands in the way of the supplier to prevent his using the best pulp and employing special characteristics in the beating to obtain strong high-grade papers to meet the specific requirements of the consumer.

In the preparation of base papers for varnishing, nothing but pure pulps should be used. Groundwood or sulphite pulps should never be used in the composition; they not only impair the mechanical strength but greatly reduce the heat resistance. For best results, "varnishing krafts" should be made from spruce sulphate pulp; pine sulphate pulp has a deleterious effect on the heat resistance, greater in extent than sulphite pulp.

A great number of electrical papers are unsized, while some of them and all of the food papers contain sufficient sizing to meet weight, strength, and, especially, Gurley density requirements. Where sizing is necessary, nothing but pure alum-rosin should be used. Mineral fillers and other loading materials will reduce flexibility and heat resistance and, in the case of electrical papers, will impair the electrical properties. It is customary for the user to specify an ash content of not more than 1.0%, and in special cases 0.5%, in order to keep inorganic fillers out of the furnish.

Surface or tub sizes should never be used; they prevent proper penetration and anchorage of the varnish.

Thickness must be controlled within the narrowest limits. Desirable tolerances are as follows:

Up to 0.00075 inch	± 5%
From 0.001 to 0.0055 inch.....	± 6.25%
From 0.006 to 0.015 inch	± 8%

The moisture content should not exceed 4%.

The density depends entirely upon whether a penetrated or nonpenetrated type of paper is desired. The proper density is usually determined by trial runs before it is definitely specified. Electrical papers usually run between 65 and 150 seconds per 100 cc., while, in the food papers, the regular supercalendered krafts are usually specified with a 300 seconds minimum and the special water-finished kraft with a 550 seconds maximum.

Varnishing papers should be as free from acid as possible in order to insure against embrittlement on baking. It is therefore desirable to include pH requirements in a specification and the value selected should be at or above the critical value previously described. A minimum pH value of 5.8 will satisfy the requirements of food papers. Electrical papers should be as close as possible to the neutral point (pH 7.0) but in no case less than 6.2. The pH specified will apply to the finished sheet of paper and not to the beater.

All papers should have an initial flexibility index of not less than 85 and, after baking 90 minutes at 290 deg. F., all, except the special water-finished kraft for food closure purposes, should have a heat resistance index of not less than 95. The water-finished kraft should be specified at minimum 90.

Conclusion

Recognition should be given to the fact that requirements of base papers for varnishing can be set up to more completely indicate probable performance in actual service if the present conventional methods of paper testing are supplemented with tests for density, pH value, flexibility index, and heat resistance index.

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The Relation of the Chemical Composition of Filler Pulps and the Color of White Urea Formaldehyde Plastics*

By George W. Ingle[1] and Harry F. Lewis[2]

Abstract

In a study of the relation between the color of urea formaldehyde plastics and the wood pulp used as a filler, it was found that the yellowness of the white plastics containing such a filler was related inversely to the alpha-cellulose content of the pulp and directly with the content of hemicellulose and the degradation products of celluloses and the hemicelluloses. The wood resins and the tannins of the pulp filler were significant only when the alpha-cellulose content was 90% or more.

No significant relation was found between the color or brightness of the plastic and that of the dry pulp filler; the commercial test of relating the wet pulp color to the color of the molded plastic was found to be valid.

Any method of increasing the alpha-content of a pulp will improve its suitability for use in white urea formaldehyde plastics; therefore, either of the two general methods for commercially producing alpha pulps may be used.

On the basis of this work the following analytical constants represent the qualifications for a suitable pulp: a minimum alpha-cellulose content of 87.5%, a maximum pentosan content of 4%, a maximum one per cent sodium hydroxide solubility of 4%, and a maximum wood resin content of 0.2%.

One of the more perplexing problems in the production of crystal and tinted translucent and transparent plastics is the cause, measurement, and control of yellowness in the base material. While this is true of practically all the higher grade plastic materials, such as cellulose nitrate, cellulose acetate, polystyrene, vinyl acetals, and even the lighter-colored cast phenolics, it is particularly true for urea formaldehyde plastics employing cellulose fillers. In 1939, 7000 tons of molded urea plastic were produced; with an average filler content of 40%, this might well represent the not inconsiderable demand for 2800 tons of quality pulp.

Fillers were first used to lower the costs of molding materials, but it was soon found that their inclusion resulted in greater molding speeds, closer tolerances in the molded piece, more consistant strength characteristics, improved electrical properties, and high heat and chemical resistance.

* A portion of a thesis submitted by G. W. Ingle in partial fulfillment of the requirements of The Institute of Paper Chemistry for the degree of Master of Science from Lawrence College, Appleton, Wis., June, 1940.

[1] Monsanto Chemical Company, Springfield, Mass.

[2] Member TAPPI, Dean, The Institute of Paper Chemistry, Appleton, Wis.

Among the several types of fillers which may be used, several cellulose products such as wood flour, cotton, paper pulp, and textile by-products have come into prominence. Wood flour is widely used, especially in molded phenolics in this country and in opaque urea plastics of inferior light resistance in other countries, but the preference in the United States has been for the more purified forms, such as wood pulps, to develop light colored, light-resistant translucent molding materials.

The few published specifications for such pulps, with particular regard for the color of the finished plastic, are incomplete. Meharg *(1)* lists as secondary requirements for these materials "a light color which is retained at elevated temperatures and in the presence of the resins and chemicals used" and the stability of this light color of the pulps to the conditions of use, since this light color and light shades in general are the salient features of the urea plastics.

Meharg *(2)* believes that a pulp of low wood resin content will have a greater resistance to the active materials in the synthetic resin; furthermore, that the solvent resistance is important only in that the solvent must not extract any substantial amount of soluble material from the filler, particularly if this material is colored, but the filler must be inert to acids and alkalies. The literature contains no further specifications for such pulp fillers, but if we assume that, in the molding operation, because of the high temperatures and pressures employed, a reaction occurs similar to that in the fading of paper—at least involving the same responsible constituents—we may suspect any constituent of the pulp besides the alpha-cellulose fraction. Several bibliographies concerning the color-responsible constituents in the fading of pulp have been published; of these, that of Tongren *(3)* is perhaps the most recent. His work indicated that the hemicelluloses, the bleach residues and, to a much lesser extent, the natural resin in bleached pulp are mainly responsible for the coloring of sheets made from this pulp on exposure to light and elevated temperatures.

Experimental Procedure

The principal object of this work was to determine the relation, if any, between the chemical constituents of the pulp filler and the initial color (yellowness) of the molded white translucent urea formaldehyde plastic. Problems directly related to this basic study were the determination of the specifications of pulps suitable for use as fillers in such plastics; the development of a simple qualifying test for such pulps; the investigation of commercially feasible methods, if any for sufficiently improving low quality pulps to permit their use as fillers for this type of plastic; the fundamental examination of an available commercial colorimetric method of testing the suitability of such pulps, and the determination of the color-responsible constituents of quality pulps.

Preparation of Resin and Pulp

The urea formaldehyde resin was prepared in the laboratory in small quantities as needed, under carefully controlled conditions. A solution of 50 grams of urea in 100 grams of neutral formaldehyde was sufficient for fifteen molded disks. After the urea was dissolved, the pH of the solution was adjusted to the neutral point by the addition of dilute sodium hydroxide, using the Cameron (glass electrode) pH meter. The solution was heated to boiling as rapidly as possible in a round-bottom flask under a water-cooled reflux condenser and refluxed for 1.5 minutes, after which it was cooled immediately to 30 deg. C. The pH of the solution was then adjusted to 4.5 by the addition of dilute chloracetic acid, so that the pH of the dried pulp pad impregnated with resin was about 6.

Circular pulp disks were then impregnated with the resin solution to produce a mixture of about 40% pulp and 60% resin after drying in a vacuum oven. These dried pulp-resin mixtures were molded in a simple circular overflow flash mold under standardized conditions. Plastic disks were molded from unextracted pulps, from pulps extracted with acidulated alcohol until free of wood resin, and from pulps extracted with hot 1% sodium hydroxide.

A series of pulps of varied quality was used in this study; cotton linters prepared in lap form; a purified sulphite pulp; another sulphite pulp more highly purified, an eastern bleached sulphite, a western bleached sulphite, a purified bleached kraft, a northern bleached kraft, a bleached soda, and a pulp sample labelled as satisfactory by a urea plastics manufacturer (which was found by analysis to be purified sulphite).

To characterize completely the quality of these pulps used as fillers, the following analyses were made, according to the methods of The Institute of Paper Chemistry: alpha-, beta-, and gamma-celluloses, 1% sodium hydroxide solubility, copper number, cuprammonium disperse viscosity, pentosans, ash and wood resin contents, and hot water and alcohol-benzene solubilities. Pulps extracted with 1% caustic and with alcohol-benzene mixture were reserved for yellowness measurements, as were the extracts themselves.

Yellowness Determination

The yellowness of all materials—molded plastic disks, wet and dry pulp handsheets, and pulp extracts—was calculated from reflectance or transmission curves determined by the General Electric recording spectrophotometer. By means of equations derived by Kubelka and Munk *(4)* and simplified by Steele *(5)* and Judd *(6)*, it is possible to calculate the scattering coefficient and the ratio of the scattering to the absorption coefficient from measurements of any two of three reflectances of the translucent material backed by a material of zero reflectance, one of 98% reflectance, or by an opaque pad of the material itself. Tongren *(3)* found that the slope of the curve of this ratio, commonly designated as the Kubelka-Munk number, over the visible wavelengths was indicative of the yellowness of handsheets. Because the scattering coefficients for materials of the same type having spectral reflectance curves of the same shape are of like magnitudes, this factor may be eliminated in comparisons of a given class of materials; also, because it was inconvenient to use standard weight samples throughout, the absorption coefficient per gram-weight was calculated for the visible wavelengths. The slope of this curve, effectively the relative absorption of blue, was taken as a measure of yellowness; for purposes of accuracy and convenience, this slope was designated as the difference in the values of the absorption coefficient per gram-weight at 420 and 460 mμ. Brightness was specified as the reciprocal of the absorption coefficient per gram weight at 420 mμ.

For the relatively transparent 1% caustic extracts and ether-soluble wood resins, transmission curves were determined and the absorption coefficients per unit thickness calculated from these by the exponential relation between transmission and thickness. Because it was impossible to make all measurements of the wood-resin solutions at the same concentration, the absorption coefficient per unit concentration was calculated for these by Beer's Law, after proving the validity of this relation for these materials. Yellowness was then calculated as the difference between the values of the proper coefficients at 420 and 460 mμ.

The transmitted yellowness of the wet pulps was calculated from the transmission curves as above. To eliminate the factor of small variations in the weights of the handsheets used, the absorption coefficient per gram-weight was used, as in the case of yellowness calculated from reflectance curves.

Causes of Yellowness

When the various analytical results were related to the yellowness of the plastics containing unextracted pulp fillers (Fig. 1 and 2), a close direct correlation of the alpha-cellulose content (or beta- plus gamma-cellulose content) and the 1% caustic solubility with the yellowness of the molded plastics was found. This indicates that the predominating factor in the color relationship was the extent to which the pulp had been freed from hemicelluloses and from the degradation products of cellulose and the hemicellulose, such as result from cooking and bleaching. The more complete break-down of these materials by heat and pressure of the curing operation must, then, be sufficient to produce yellowness in the molded plastic. All determinations which vary in the inverse direction to the alpha-cellulose content—such as copper number, hot water solubility, and pentosans—showed, therefore, a rough relationship with yellowness. The cuprammonium disperse viscosity showed no correlation with yellowness. The 1% sodium hydroxide solubility, a test particularly adapted to measuring the hemicelluloses and the degradation products of cellulose and the hemicelluloses, and chemically similar to alpha treatment, correlated with yellowness over the entire range of the pulps studied. Assuming that the hot 1% caustic extract will contain the gamma-cellulose, and some portion of the beta-cellulose, this might indicate that the least resistant fraction of these celluloses was responsible for the color, whereas the correlation of color with the alpha-cellulose content indicated that all but this most resistant fraction caused the color of the molded plastics. To clarify this point, plastics were molded with pulp fillers previously extracted with 1% sodium hydroxide. These showed an improved color, particularly those containing the lower quality pulps but the general order of increasing yellowness was maintained. Thus, the total beta- plus gamma-cellulose fraction was responsible for the color; furthermore, whereas the 1% sodium hydroxide solubility must correlate with color through its general inverse relation with the alpha-cellulose content, extraction with 1% caustic will remove a certain proportion of these color-responsible products, thereby effectively increasing the alpha-cellulose content, and correspondingly decreasing the yellowness of the molded plastic.

The wood resin content and alcohol-benzene solubility were found to be important in the coloring of the molded plastic only when the alpha-cellulose content was 90% or more; higher proportions of

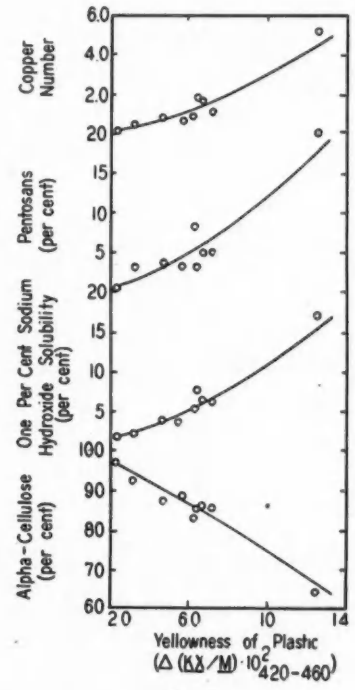

FIG. 1
Relation Between Color of Plastic and Chemical Analyses of Pulp Filler-I

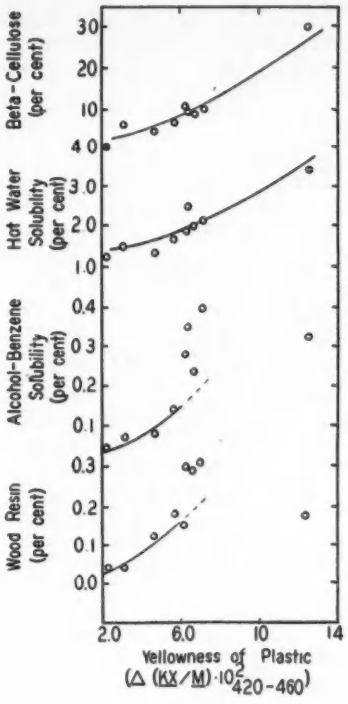

FIG. 2
Relation Between Color of Plastic and Chemical Analyses of Pulp Filler-II

degraded celluloses must obscure the discoloring effect of wood resins and tannins as they occurred in these paper pulps. A series of plastics was molded using for fillers, wood resin-free pulps prepared by extraction with acidulated alcohol. These showed a slight improvement in color over plastics molded with the original unextracted pulp fillers, and those with the better pulp fillers showed the most improvement. The yellowness of the wood resin itself bore no relation to the molded plastic, nor did weighting the color by the weight percentage of resin present in the pulp filler show any correlation.

The yellowness of handsheets of the pulps used showed a poor correlation with that of the plastics containing these as fillers. However, in the production of white translucent urea plastics, filler pulps are often tested for their suitability by simply observing the transmitted color of the wet lap pulp pasted upon a window pane. To check the validity of this method, both the transmitted and reflected yellownesses of wet handsheets of both the unextracted and the 1% caustic-extracted pulps were compared with the yellowness of the molded disks containing these pulps as fillers. In each case a fair correlation was obtained.

The fair degree of correlation found to exist between the yellowness of the molded plastic and that of the wet filler pulps suggested that the latter might be related to those constituents responsible for the color of the plastic disks. As in the case of the plastics, the wet color correlated best with the alpha-cellulose content (Fig. 3); the correlation with the other analyses would be expected from the general inverse relation with the alpha-cellulose content. As with the plastics, the wood-resin content was insignificant in this color relation, except in the case of the better quality pulps.

The brightness and yellowness of the molded plastics were found to be mutually independent, so that the brightness must be independent of all measures of the degree of degradation used in this study. In addition, the brightness of the plastics was not related to that of the pulp fillers; however, there seemed to be a definite inverse relation between plastic brightness

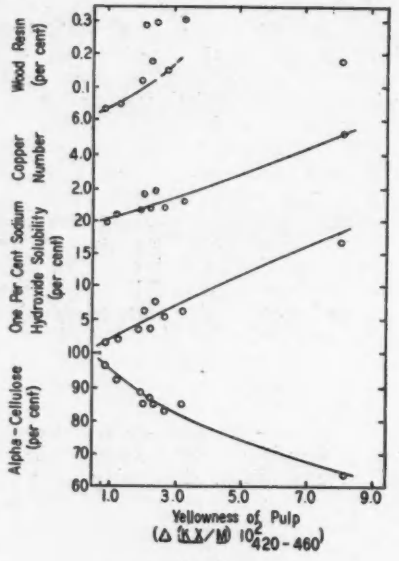
Wood Resin (per cent)
Copper Number
One Per Cent Sodium Hydroxide Solubility (per cent)
Alpha-Cellulose (per cent)
Yellowness of Pulp
(Δ KX/M) 10² 420-460

FIG. 3

Relation Between Color of Wet, Unextracted Pulp and Its Chemical Composition (Data Taken from Reflectance Curves)

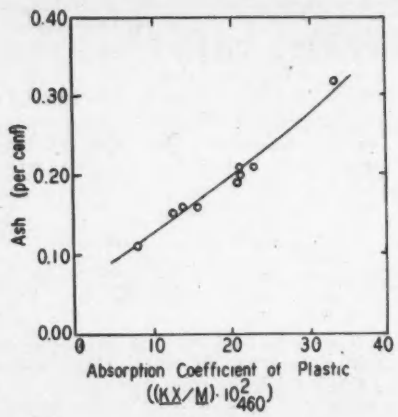

FIG. 4

Relation Between Brightness of Plastic and Ash Content of Pulp Filler (The Brightness Varies Inversely as the Absorption Coefficient)

and the ash content of the filler (Fig. 4). In each case, plastics containing fillers previously extracted with hot 1% caustic and with acidulated alcohol were brighter than those with unextracted pulp fillers; this was particularly noticeable with pulps of originally higher ash contents, effectually lowered by the extraction processes.

In the course of the pulp analyses it was noticed that the color of the hot 1% caustic extracts was apparently directly related to the color of the molded plastics containing these pulps as fillers and, incidentally, to the 1% caustic solubility. This was established quantitatively through measurements of the color of these extracts. This relation might serve as a simple analytical test for qualifying pulps—in the interesting range of higher pulp quality—for use as fillers in translucent white urea plastics. A noticeable increase in the yellowness of the 1% caustic extract is accompanied by an increase in the yellowness of the molded plastic.

Conclusion

From these results we may conclude that either of the two general commercial methods of alpha treatment will increase the suitability of a pulp filler for white translucent urea plastics; furthermore, that specifications for pulps suitable for use as fillers in this type of plastic should include a minimum degree of degradation, and in the highest quality pulps, a minimum percentage of extractives. Based upon the results of analyses of a commercially acceptable pulp filler, these characteristics are satisfied by a pulp having a minimum alpha-cellulose content of 87.5%, a maximum pentosan content of 4.0%, a maximum 1% sodium hydroxide solubility of 4.0%, and a maximum wood-resin content of 0.2%. By using a pulp filler having these specifications, the yellowness of white translucent urea formaldehyde molded materials should be kept above the desirable minimum.

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(5) Steele, F. A., *Paper Trade J.* 100, no. 12:37-42 (March 21, 1935); *Tech. Assoc. Papers* 18:299-304 (June, 1935)
(6) Judd, Deane B., *Tech. Assoc. Papers* 18:441-442 (June, 1935); *Paper Trade J.* 101, no. 5:40-41 (Aug. 1, 1935).

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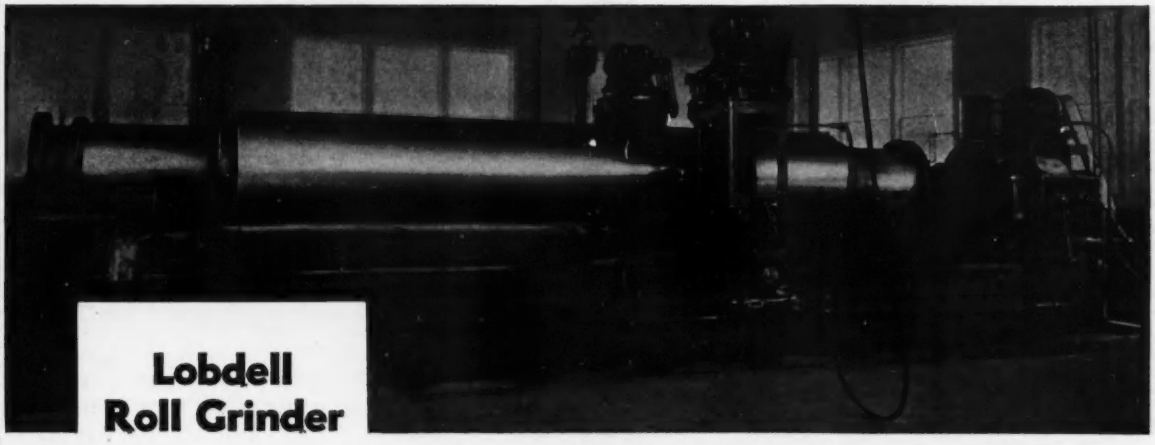

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Effective September 30, 1939, under Treasury Decision 49,970, all publications, exchanges and trade associations were denied access to import manifests at the New York Customs House. The Paper Trade Journal and other interested parties have vigorously protested this ruling, and as soon as the order of the Treasury Department is modified or rescinded, full publication of all manifests will be resumed in these columns. In the interim, the Paper Trade Journal is making every possible effort to gather all available information from manifests, at various outside sources.

NEW YORK IMPORTS

WEEK ENDING AUGUST 16, 1941

SUMMARY

Newsprint .....13,438 rolls
Filter paper.....35 cs.
Drawing paper .....7 cs.
Tissue paper .....52 cs.
Decalcomania paper .....46 cs.
Air mail paper.....1 cs.
Photo paper .....6 cs.

NEWSPRINT

H. G. Craig Co., Inc., ——, Donnacona, 336 rolls.
——, ——, Comeau Bay, 3,185 rolls.
International Paper Co., ——, Gatineau, 287 rolls.
——, ——, Comeau Bay, 7,694 rolls.
H. G. Craig Co., Inc., ——, Donnacona, 382 rolls.
——, ——, Cornerbrook, 1,544 rolls.

FILTER PAPER

H. Reeve Angel & Co., Inc., ——, Liverpool, 35 cs.

DRAWING PAPER

H. Reeve Angel & Co., Inc., ——, Liverpool, 7 cs.

TISSUE PAPER

G. F. Malcolm Co., ——, Liverpool, 39 cs.
B. F. Drakenfeld & Co., ——, Liverpool, 13 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., ——, Liverpool, 46 cs., (duplex).

AIR MAIL PAPER

B. F. Drakenfeld & Co., ——, Liverpool, 1 cs.

PHOTO PAPER

——, ——, Liverpool, 6 cs.

RAGS, BAGGINGS, ETC.

Castle & Overton, Inc., ——, Buenos Aires, 11 bls. paperstock, 3 bls. linen waste, 14 bls. old white knits.
National City Bank, ——, Buenos Aires, 5 bls. rags.
West Texas Cottonoil Co., ——, Santos, 330 bls. cotton linters.
——, ——, Liverpool, 30 bls. rags.
W. R. Grace & Co., ——, Callao, 40 bls. cotton linters.
Philadelphia National Bank, ——, Callao, 24 bls. cotton waste.
West Texas Cottonoil Co., ——, Buenos Aires, 797 bls. cotton linters.
——, ——, Buenos Aires, 1,842 bls. cotton linters.
Castle & Overton, Inc., ——, Buenos Aires, 10 bls. cellulose.
——, ——, Buenos Aires, 200 bls. cellulose.
——, ——, Santos, 103 bls. cotton linters.
Philadelphia National Bank, ——, Santos, 141 bls. cotton linters.
Kauders Steuber Co., ——, Santos, 185 bls. cotton linters.

BONE GLUE

T. W. Dunn & Co., ——, Santos, 400 bags.

BONES

Darmstadt Scott & Courtney, ——, Buenos Aires, 737 bags.

HIDE CUTTINGS

——, ——, Liverpool, 201 bags.

FLESHINGS

H. Remis & Co., ——, Havana, 179 bls.

GLUESTOCK

Darmstadt Scott & Courtney, ——, Buenos Aires, 67 bls.

CASEIN

American British Chemical Supplies, ——, Buenos Aires, 397 bags.
Fleischmann Burd & Co., Inc., ——, Buenos Aires, 250 bags, 15,000 kilos.
National City Bank, ——, Buenos Aires, 535 bags, (unground).
American Cyanamid & Chemical Corp., ——, Buenos Aires, 1,334 bags, (rennet), 80,040 kilos.
American Cyanamid & Chemical Corp., ——, Buenos Aires, 287 bags, (ground) 16,020 kilos.
H. S. Cramer & Co., ——, Buenos Aires, 417 bags, (lactic), 25,020 kilos.

BOSTON IMPORTS

WEEK ENDING AUGUST 16, 1941

——, ——, Rie de Janiero, 63 bls. leather waste.

Pulp Export Control List

Under instructions from President Roosevelt on August 16, a long list of additional commodities, including practically all wood pulp, metals and manufactures, machinery and vehicles, rubber and manufactures not already listed, and chemicals and related products except certain pharmaceuticals and medicines, have been placed under export control by Brig. Gen. Russell L. Maxwell, Administrator of Export Control.

The inclusion of these articles will bring the total list of controlled commodities to about 80% of the total value of exports for the first five months of 1941.

Norbert A. McKenna Appointed

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 20, 1941—Appointment of Norbert A. McKenna of New York City as Chief of the Paper, Pulp, Printing and Publishing Branch of the Office Production Management has been announced by W. L. Batt, Sr., Deputy Director of the Production Division.

Mr. McKenna has resigned as vice-president of the United States Plywood Corporation, in charge of its moulded plastic plywood division. Prior to his connection with that company he was a partner in the banking firm of Eastman, Dillon and Company from 1936 to 1940 and president of American Airports Corporation.

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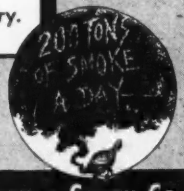

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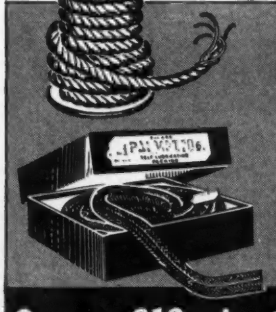

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New York Paper and Pulp Market Review

Paper Market Active and Quotations Firm With Talk of Higher Newsprint Prices — Pulp Market Strong With Trend of Prices Up — Rag Prices Well Maintained — Old Waste Unchanged.

Office of the PAPER TRADE JOURNAL.
Wednesday, August 20, 1941.

Heavy demand and high production continues to maintain a strong paper market. Large government purchasing as a part of the defense program and a record demand for civilian uses places the paper industry in a strong position, while some other important industries are beginning to experience some slackening of activity. Current reports indicate that some paper mills are forced to shut down machines because of the inability to obtain materials for their operation and, as the government has quite frequently pointed out, manufacturers of most goods for civilian uses may have to susbtantially restrict production while others may have to shut down entirely because of the shortage of materials.

The changes now taking place as the productive capacity of the country is more and more concentrated on defense, are beginning to be reflected in the indices of business. Unfortunately, the smaller business enterprises are expected to find it especially difficult to operate.

The index of general business activity for the week ended August 9 declined to 131.0%, from 132.1% for the previous week, compared with 107.3% for the corresponding week last year. Paper board production was fractionally higher.

Paper production for the week ended August 9 was estimated at 102.3%, compared with 87.9% for 1940, with 81.9% for 1939, with 78.0% for 1938, and with 80.0% for the corresponding week for 1937.

Paper board production for the week ended August 9 was 91.0%, compared with 74.0% for 1940, with 72.0% for 1939, with 65.0% for 1938, and with 75.0% for the corresponding week for 1937.

In view of the general rising trend in total production costs, the price situation is the cause of much concern and the subject of much publicity. Higher prices in general, including paper and pulp, seem inevitable under the great stimulus of government expenditures, although the insistence of priorities is expected to check the manufacture of goods for purely civilian use. The trend toward higher paper prices, has been noted for some weeks. Voluntary stabilization of paper board and the major lower grades of waste paper has adjusted these markets at what the OPM considers a fair price level, until October 1.

Higher newsprint prices are being discussed in Canada, with some reports indicating the possibility that a price of $55 per ton may be named in the last quarter. The concensus of opinion in the trade at this date, however, apparently holds the view that domestic prices, at least, will continue at $50 per ton for the remainder of the year.

The Great Northern Paper Company announced last week that it had advanced its price of newsprint $1 per ton to $50 per ton, in the New York territory.

Trade reports reflect the difficulty of manufacturers in supplying the heavy demand for many grades of paper, particularly in the wrapping grades, and in paper board. Backlog orders are large and government buying is reported increasing in these grades.

Chemical Pulp

The chemical pulp market is very firm, with demand for all grades active. The prime grades are reported more scarce, with high prices on sales of small lots in the spot market. It is generally expected in the trade that higher prices will prevail in the future.

Rags

The rag market is strong under an increased demand for some grades, particularly in new white cotton cuttings. Roofing rags are firm. Although high rag prices on these grades are still looked for in some quarters of the trade, no important price changes have been reported at this date.

Old Rope and Bagging

Old rope prices are firm under good mill buying. No important change in prices or in the general market situation has been reported at this date.

Demand for old bagging continues active. This market continues to reflect the strong tone which has prevailed for some time, due to the steady demand and limited supplies. Prices are unchanged.

Old Waste Paper

All grades of waste paper are reported very firm at this date. The maximum prices on the three major lower grades, having been stabilized until October 1 by voluntary agreement between many dealers and the OPM, no changes have occurred since in these grades. Prices on other grades are also unchanged at this date.

Twine

A strong demand for many grades of twine continues to maintain firm prices. The difficulty of obtaining many imported fibers has created a scarcity in these grades, with no immediate prospect of larger supplies to relieve the situation. Prices are, therefore, nominal in some instances, with higher quotations expected in some quarters of the trade.

Lease Mill at Westport, Conn.

Substitute Fabrication Materials, Inc., has leased through the Gibbs-Brower Company with option to buy the mill of the Westport Paper Board Company, Inc., at Westport, Conn. The officers of the company are: Edward H. Loftin, Boonton, N. J., president; Hermann G. Seibold, New York City, vice-president and treasurer; Robert D. O'Callaghan, New York City, secretary, and the three officers named constitute the Board of Directors. Substitute Fabrication Materials, Inc. plans to manufacture suitable substitues for scarce National Defense Program materials and perhaps suitable substitutes for prohibited materials in private industries.

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BLEACHED AND UNBLEACHED KRAFT PULP

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Luke, Maryland
Covington, Virginia
Tyrone, Pennsylvania
Williamsburg, Pennsylvania
Cass, West Virginia
Charleston, South Carolina

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, August 20, 1941.

BLANC FIXE—Quotations on blanc fixe are firm and continue unchanged at prevailing market levels. Demand reported steady for the week. The pulp is currently quoted at $35 per ton in barrels, at works; the powder is offered at $50 per ton, f.o.b., works.

BLEACHING POWDER—Prices on bleaching powder are firm. Market reported active for the week. Bleaching powder is currently quoted at $2 per 100 pounds, in drums, at works.

CASEIN—Quotations on casein are higher. Demand active for the week. Standard domestic casein, 20-30 mesh, is currently quoted at 23 cents per pound; 80-100 mesh, at 23½ cents per pound; all prices in bags, car lots. Standard Argentina casein is currently offered at 22½ cents per pound. No quotations on French casein.

CAUSTIC SODA—Prices on caustic soda are unchanged. Demand reported heavy for the week. Solid caustic soda is currently quoted at $2.30 per 100 pounds, flake and ground at $2.70 per 100 pounds, in drums, at works.

CHINA CLAY—Quotations on china clay are firm and continue unchanged this week. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay at from $12 to $22 per ton, at mines. Imported clay is quoted at from $13 to $25 per long ton, ship side.

CHLORINE—Quotations on chlorine unchanged. Market under full priority control. Chlorine is currently quoted at $1.75 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—Quotations on most grades of rosin are unchanged for the week. "G" gum rosin is currently quoted at $2.45 per 100 pounds, in barrels, Savannah. "FF" wood rosin is currently quoted at $2.45 per 100 pounds, in barrels, New York. Seventy per cent gum rosin size is quoted at $2.96 per 100 pounds, f.o.b., works.

SALT CAKE—Prices on salt cake are firm. Demand good, with current quotations nominal. Domestic salt cake is currently quoted at $15 per ton in bulk; chrome salt cake at $16 per ton. All prices in car lot, f.o.b., shipping point. The quotation of $16 per ton on imported salt cake continues nominal.

SODA ASH—Quotations on soda ash are firm and continue to conform to prevailing market quotations. Demand reported good. Quotations on soda ash in car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Prices on corn starch are firm and continue unchanged for the current week. Pearl is currently quoted at $3.10 per 100 pounds; powdered starch at $3.20 per 100 pounds; all prices in bags, car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—Quotations on sulphate of alumina are firm. Demand reported good for the current week. The commercial grades are currently quoted at $1.15 per 100 pounds; iron free at $1.80 per 100 pounds, in bags, car lots, f.o.b., works.

SULPHUR—Prices on sulphur are firm and continue to conform to prevailing market quotations. Annual contracts are currently quoted at $16 per long ton, f.o.b., mines. Spot and nearby car lots are quoted at $18 per ton.

TALC—Quotations on talc are firm and continue unchanged at prevailing market prices. Domestic talc is currently quoted at from $15 to $21 per ton, at mills. No quotations on imported talc.

MARKET QUOTATIONS

Paper

(Delivered New York)

News, per ton—			
Roll, contract	$50.00	@	—
Sheets	58.00	"	—
Kraft—per cwt.—Delivered Zone A			
Northern, Extra Quality	$5.25	@	$6.00
Superstandard	4.87½	"	5.25
Northern Standard Wrapping	4.50	"	5.00
Standard Wrapping	4.50	"	—
Tissues—Per Ream—Carlots			
White No. 1	1.07½	"	—
White No. 1 M. G.	.97½	"	—
White No. 1½	.85	"	—
White No. 2	.85	"	—
Anti-Tarnish M. G.	.90	"	—
Colored	1.00	"	—
Kraft	.90	"	—
Manila	.80	"	—
Unbl. Toilet, 1 M.	4.14	"	—
Bleached Toilet	5.60	"	—
Paper Towels, Per Case			
Unbleached, Jr.	3.80	"	—
Bleached, Jr.	2.30	"	—
Manila—per cwt.—C. l. f. a.			
No. 1 Jute	8.75	@	10.75
No. 1 Manila Wrapping, 35 lb.	5.50	"	5.75
No. 2 Manila Wrapping, 35 lb.	5.25	"	5.50
Boards, per ton—			
News	45.00	@	—
Chip	45.00	"	—
Sgl. Mla. Ll. Chip	60.00	"	—
White Pat. Coated	75.00	"	—
Kraft Liners	60.00	"	—
Binders Boards	80.00	"	—

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds		Ledgers	
100% Rag Ext. No. 1	$39.10 @	$46.00	$40.25 @	$47.25
100% Rag	31.05 "	36.50	32.20 "	37.75
85% Rag	.... "	....	29.90 "	35.00
75% Rag	23.60 "	27.75	24.75 "	29.00
65% Rag	.... "	....	21.65 "	26.25
50% Rag	17.55 "	21.50	18.70 "	22.75
25% Rag	14.65 "	17.75	15.80 "	19.25

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items. Delivered in Zone 1:

	Bonds		Ledgers	
No. 1	$9.35 @	$11.50	$11.55 @	$12.75
No. 2	8.50 "	10.25	9.65 "	11.75
No. 3	8.05 "	9.25	9.20 "	11.25
No. 4	7.70 "	9.50	8.90 "	10.75

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper.

Delivered in Zone 1:

No. 1 Glossy Coated	$11.90 @		$13.50
No. 2 Glossy Coated	10.35 "		11.75
No. 3 Glossy Coated	9.55 "		11.00
No. 4 Glossy Coated	9.15 "		10.50
No. 1 Antique (watermarked)	9.05 "		10.50
No. 2 Offset	8.40 "		9.75
A Grade E. F.	8.20 "		9.50
A Grade S. & S. C.	8.45 "		9.75
B Grade E. F.	7.65 "		8.75
B Grade S. & S. C.	7.90 "		9.00
C Grade E. F.	7.35 "		8.50
C Grade S. & S. C.	7.60 "		8.75
D Grade E. F.	7.10 "		8.25
D Grade S. & S. C.	7.35 "		8.50

Ivory & India at $.50 cwt. extra.

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	No prices		
Dry	No prices		

(Delivered)

No. 1 Domestic and Canadian	40.00	@	42.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Prime Bleached Sulphite	3.72½	@	3.87½
Prime Qualities—			
Easy-Bleaching Sulphite	3.17½	"	3.75
Strong Unbleached Sulphite	3.17½	"	3.75
News Grade, delivered			
Unbleached Sulphite	61.00	"	64.25

(On Dock, Atlantic Ports)

Kraft Bleached	4.12½	"	—
Kraft Light & Strong	3.75	"	4.15
Kraft No. 1	3.60	"	4.00

(F. o. b. Pulp Mill)

Kraft Domestic and Canadian	2.75	"	3.37½

(Delivered)

Soda Bleached	3.30	"	—

Add 60 cents per short ton, dock charges for Albany; $2.50 for Lake Ports East and $3.50 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	7.00	@	7.25
Silesias No. 1	4.25	"	4.50
New Unbleached	7.00	"	7.25
Blue Overall	4.75	"	5.00
Fancy	2.50	"	2.75
Washables	2.00	"	2.15
Mixed Khaki Cuttings	2.50	"	2.75
O. D. Khaki Cuttings	3.00	"	3.15

Old Rags

White, No. 1—			
Repacked	3.10	"	3.35
Miscellaneous	2.35	"	2.65
White, No. 2—			
Repacked	2.50	"	2.75
Miscellaneous	2.00	"	2.25
Thirds and Blues—			
Repacked	1.25	"	1.35
Miscellaneous	1.10	"	1.25
Roofing Rags—			
No. 1	1.30	"	1.35
No. 2	1.20	"	1.25
No. 3 (bagging)	.95	"	1.00
No. 4	.90	"	.95
No. 5A	.90	"	.95

Foreign Rags

All prices nominal

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.25
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—

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Livermore Falls, Maine

No. 4 White Linens.	2.25	@	3.25
No. 1 White Cotton.	4.25	"	4.75
No. 2 White Cotton.	3.25	"	3.75
No. 3 White Cotton.	2.50	"	3.00
No. 4 White Cotton.	1.90	"	2.20
Extra Light Prints..	2.00	"	2.40
Ord. Light Prints...	1.75	"	2.15
Med. Light Prints...	1.55	"	1.95
Dutch Blue Cottons.	2.25	"	2.50
French Blue Linens.	3.00	"	—
Checks and Blues...	2.08	"	—
Linsey Garments....	1.90	"	2.00
Dark Cottons.....	1.50	"	1.60
Old Shopperies.....	1.30	"	1.45
New Shopperies.....	1.45	"	1.50
French Blues.....	2.25	"	2.50

Old Rope and Bagging

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	4.15	@	4.25
Wool Tares, light....	2.50	"	2.75
Wool Tares, heavy..	2.50	"	2.75
Bright Bagging.....	3.15	"	3.30
Manila Rope—			
Foreign	6.00	"	6.25
Domestic	6.00	"	6.25
Jute Threads.....	3.50	"	3.75
Sisal Strings	2.10	"	2.35
Mixed Strings.....	1.10	"	1.20

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	3.50	@	3.75
Ordinary Hard White No. 1....	2.75	"	3.00
Soft White No. 1..	2.50	"	2.75
Sott White Extra..	2.70	"	2.85
Flat Stock—			
Stitchless	1.10	"	1.25
Overissue Mag.....	.90	"	1.00
Solid Flat Book...	.90	"	.95
Crumbled No. 1 ..	.70	"	.75
Ledger White Stock.	2.10	"	2.15
Ledger Stock Colored	1.75	"	1.90
Manila—			
New Env. Cut....	3.25	"	3.50
New Cuttings.....	3.00	"	3.25
Old Kraft Machine Compressed bales..	1.75	"	2.00
News—			
No. 1 White News	1.50	"	1.60
Strictly Overissue.	.75	"	.80
Strictly Folded....	.65	"	—
Corrugated	.82½	"	—
No. 1 Mixed Paper..	.57½	"	—

Twines

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—			
India	.20	@	—
White Hemp.....	.20	"	—
Fine Polished—			
Fine India.....	.24	"	—
Unpolished—			
Box	.16¼	"	—
Paper Makers.....	.16	"	—
Tube Rope.....	.17½	"	—
Wall Paper.....	.19½	"	—
Wrapping	.21	"	—
Soft Fiber Rope...	.18	"	—
Cotton	.24	"	—

(Hard Fiber)

Medium Java.....	.15	"	—
Mex. Sisal.....	.14	"	—
Manila	.26	"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White No. 1.	.06¾	@	.07
New White No. 2.	.04	"	.04¼
Light Silesias.....	.04½	"	.04¾
Silesias, No. 1....	.04	"	.04¼
Black Silesias, soft	—	"	.03
New Unbleached...	.06½	"	.06¾
Washable Prints..	.02½	"	.03
Washable No. 1..	—	"	.01½
Blue Overall.....	.04	"	.04½
Cottons—According to grades—			
Washable shredding	—	"	.01½
Fancy Percales....	.03	"	.03¼
New Black Soft...	.02½	"	.02¾
New Light Seconds	—	"	.04
New Dark Seconds	—	"	1.50
Khaki Cuttings—			
No. 1 O. D.....	.03	"	.03½
No. 2 Mixed.....	.02	"	.02¼
Corduroy	.01¾	"	.01½
New Canvas.....	.04½	"	.05
New Black Mixed.	—	"	.02¼

Domestic Rags (Old)

White No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.75	"	3.00
Thirds and Blues—			
Miscellaneous	1.35	"	1.50
Repacked	1.55	"	1.65
Black Stockings (Export)	Nominal		
Roofing Stock—			
Foreign No. 1....	Nominal		
Domestic No. 1....	1.35	"	1.40
Domestic No. 2...	1.15	"	1.20
Roofing Bagging..	1.05	"	1.10

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	3.25	@	3.75
Domestic	3.50	"	3.75
Manila Rope.....	—	"	5.50
Sisal Rope.....	3.50	"	—
Mixed Rope.....	.75	"	1.00
Scrap—			
No. 1.....	3.25	"	3.50
No. 2.....	—	"	1.50
Wool Tares, heavy...	4.00	"	4.25
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	3.25	"	3.50

Old Papers

(F. o. b. Phila.)

Shavings—			
Hard White Special	3.15	@	3.20
Hard White.....	2.90	"	3.00
No. 1 Soft White..	2.40	"	2.45
No. 2 White.....	1.85	"	1.90
No. 1 Mixed.....	1.20	"	1.25
Solid Ledger Stock..	2.00	"	2.10
Ledger Stock, white.	1.80	"	1.90
Ledger Stock, colored	1.70	"	1.75
No. 1 Books, heavy..	1.25	"	1.30
Manila Cuttings.....	2.25	"	2.30
Print Manila	.75	"	.80
Container Manila....	.65	"	.70
Kraft Paper.....	1.75	"	1.80
No. 1 Mixed Paper..	.57½	"	—
Straw Board Chip...	.50	"	—
Binders Board Chip..	.50	"	—
Corrugated Board....	.80	"	—
Overissue News.....	.85	"	.90
Old Newspapers.....	.65	"	—

BOSTON

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.15	@	3.25
No. 1 Soft White	2.50	"	2.75
No. 2 Mixed.....	.90	"	1.00
Solid Ledger Books..	2.00	"	2.10
Overissue Ledger Stock	1.75	"	2.00
White Ledger Stocks	1.50	"	1.65
Mixed Ledgers	1.25	"	—
No. 1 Heavy Books	1.10	"	1.20
No. 1 Books, Light..	.75	"	.85
Crumpled Stitchless Book Stock	1.15	"	1.20
Manila Env. Cuttings	3.00	"	3.25
Manila Envelope Cuttings, extra quality	2.75	"	3.00
White Blank News..	1.70	"	1.80
No. 1 Kraft.....	1.90	"	2.00
Extra No. 1 Kraft..	2.00	"	2.25
Mixed Papers.....	.57½	"	—
Print Manila.....	.70	"	—
Container Manila....	.65	"	.75
Old Newspapers.....	.65	"	—
Paper Wool Strings.	1.30	"	1.35
Overissue News.....	.65	"	.70
Box Board Chips....	.35	"	—
Corrugated boxes....	.80	"	.90
Kraft corrugated boxes	1.50	"	1.60
New Kraft Corrugated Cuttings	2.00	"	2.25
Screening Wrappers.	.85	"	.90

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	4.50	@	4.60
Sisal Rope	3.50	"	—
Mixed Rope.....	1.00	"	1.25
Transmission Rope—			
Foreign	(nominal)		
Domestic	2.75	"	3.00
Soft Jute Rope.....	4.75	"	5.00
Manila Rope—			
Foreign .....(nominal)			
Domestic	6.00	"	6.25
Jute Carpet Threads.	3.00	"	3.25
Bleachery Burlap....	7.50	"	8.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	4.25	"	—
Scrap Sisal.....	3.25	"	3.50
Scrap Sisal for Shredding	3.25	"	3.50
Wool Tares—			
Foreign	(nominal)		
Domestic	4.00	"	4.25
Aust. Wool Pouches.	4.50	"	4.75
New Burlap Cuttings	5.50	"	5.75
Heavy baling bagging	4.25	"	4.50
Paper Mill Bagging..	3.50	"	3.75
No. 2 Bagging.....	.60	"	.75

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints.	—	@	.03
Fancy Percales....	.03¾	"	4.00
New White No. 1.	.07¼	"	.07¾
New Light Flannelettes	.05¼	"	.05¾
Canton Flannel, Bleached	.06¾	"	7.00
Underwear Cutters, Bleached	.06¾	"	7.00
Silesias No. 1.....	.04¼	"	.04½
New Black Silesias..	4.00	"	—
Red Cotton Cuttings	.03½	"	4.00
Soft Unbleached.....	.07	"	.07¼
Blue Cheviots.....	.04½	"	.04¾
Fancy	.01¾	"	.02
Washable	.01¾	"	—
Cottons—According to Grades—			
Blue Overalls.....	.04¼	"	.04½
New Black, Soft..	.03	"	.03¼
Khaki Cuttings.....	.02¼	"	.02½
O. D. Khaki.....	.02½	"	.03¼
Corduroy	.02	"	.02¼
New Canvas.....	.05¼	"	—
B. V. D. Cuttings...	.06¼	"	.07

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	2.75	@	3.00
Miscellaneous	2.00	"	2.25
White No. 2—			
Repacked	1.90	"	2.00
Miscellaneous	2.00	"	2.25
Twos and Blues.....	1.75	"	2.00
Old Blue Overalls...	1.60	"	2.00
Thirds and Blues....	1.50	"	—
Miscellaneous	1.25	"	1.35
Black Stockings.....	3.50	"	4.00
Roofing Stock—			
No. 1.....	1.20	"	1.25
No. 2.....	.95	"	1.00
No. 3.....	.85	"	.93

Foreign Rags

(F. o. b. Boston)

Canvas .....(nominal)	
Dark Cottons.....(nominal)	
Dutch Blues.....(nominal)	
New Checks and Blues(nominal)	
Old Fustians.....(nominal)	
Old Linsey Garments.(nominal)	
New Silesias.....(nominal)	

DEFENSE COMMITTEES ORGANIZED

(Continued from page 7)

Printing and Publishing Divisional Committee

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Lee C. Werden, vice-president, Cuneo Eastern Press, Inc., of Penna., Philadelphia, Pa.

R. C. von Maur Joins Champion

Robert C. von Maur, who has been selling paper in the Chicago territory for several years on August 1 joined the sales staff of the Champion Paper and Fibre Company. Mr. von Maur will be associated with John R. Aust, Jr., manager of the St. Louis sales office, 102-6 Arcade Building, St. Louis.